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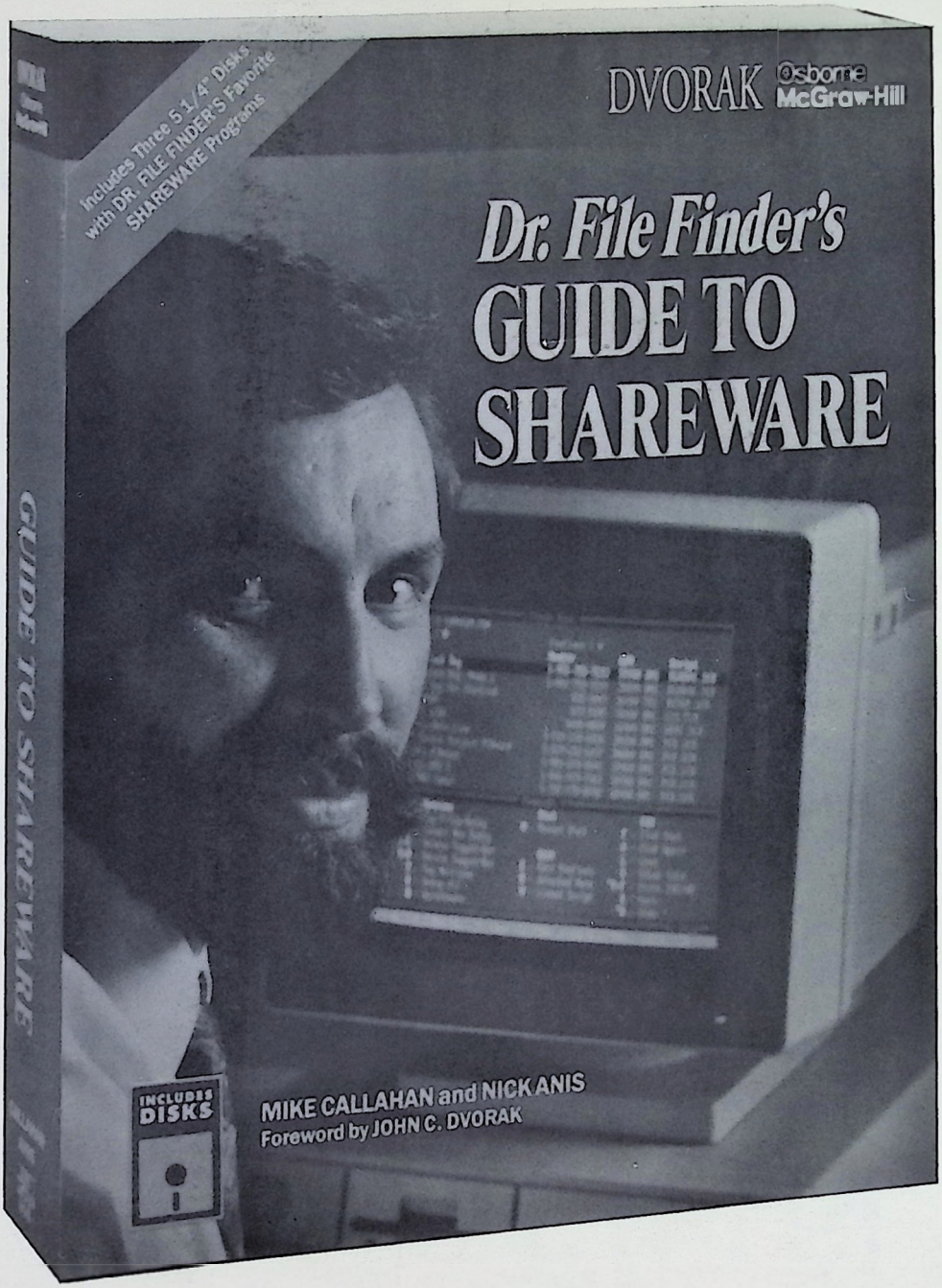
BOARDWATCH MAGAZINE

Electronic BBS and Online Information Services



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The BBS consists of a large computer with BIG disk drives (more than 6 gigabytes!) and many phone lines connected to it. The computer currently has 100+ phone lines, allowing it to talk to 100+ callers at once; it receives about 3000 calls per day. Using the BBS is easy, since it is menu driven and you simply choose what you want to do.

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Company (optional) _____

Name you will use for Logon to BBS (required)

First _____ Last _____

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BOARDWATCH MAGAZINE

EDITOR'S NOTES 7

A Graphic Interface - It's Time 7
Electronic Democracy - Let Freedom Ring? 9

TELEBITS 13

NYNEX Pays Off FCC 13
Rumors, Might Be's, Numbers Caught In Passing 13
Hayes Enhanced Serial Port Shipping 14
Football Broadcast Hotline 15
FAX Attachment for Laser Printers 15
Plug Your Favorite Keyboard into Any Laptop 16
International Telephone Jack Adapter 16
Montgomery Ward - A Force in PC Retailing? 16
Software Sends, Receives Messages Via FAX, Telex, TWX, Modem 16
The Complete PC Reduces FAX Board Prices 17
Millicom Study Finds 40% of All U.S. Households Would Subscribe to PCN 17
Language Translation Software 18
Intel Introduces SatisFAXtion FAX/Modem Card 19
V.32bis Modems to Deliver 14,400 bps and FAX 19
Add PC Expansion Cards to Toshiba Laptops 19
Global Dialog President Visits Colorado Springs 19

BOOK REVIEW - DR. FILE FINDER'S GUIDE TO SHAREWARE 20

UNLIMITED ACCESS 23

Prodigy - GEnie Experiment with Change 23
Whole Earth Lectronic Link Offers Free Time for New Subscribers 25
Letter to Boardwatch 28
The Original FIDO BBS 28
All That Glitters - Treasure Hunting in the Computer Garden BBS 29

SOFTWARE NOTES - *Compression Wars Continued - PAK Version 2.51* 32

DR. FILE FINDER - *PC-Draft II and PC Draft CAD* 33

This Issue's Feature City - Chicago 36
BBS Classified Ads 44
Boardwatch National Select List of BBS 46

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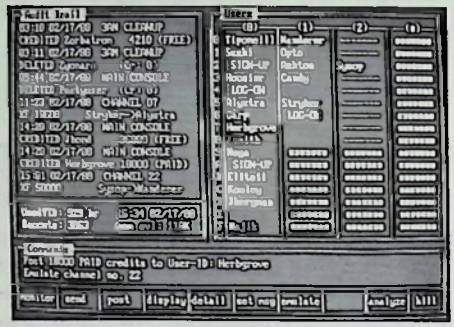
Which Multi-User BBS Is Best?

The top five DOS-based multi-user Bulletin Board Systems on the market are The Major BBS, TBBS, PC Board, DLX, and WILDCAT! Which one is for you? Here are some facts to help you decide.

All of these BBS designs offer E-Mail, file upload/download, teleconferencing, security controlled access to various configurable message and file bases, and so on. Each comes with professional documentation, telephone support, and a set of easy-to-use configuration and maintenance utilities.



The Major BBS: multi-user E-Mail, file upload & download, teleconferencing, message bases, plus!

The Major BBS, TBBS, and DLX all support multiple simultaneous users on a single desktop computer running standard MS-DOS version 3.0 or higher. PC Board and WILDCAT! require a separate computer for each user, with the computers connected together via LAN, unless you plan to use a DOS-overlay multi-tasking executive such as DESQview or DoubleDOS.

As of this writing, The Major BBS can support up to 64 simultaneous users, TBBS can support up to 32, and DLX can support up to 24. In each case, specialized multi-port hardware is needed to support 6 or more users, but standard COM ports can be used for smaller systems. The Major BBS is the only one that can support 4 standard internal COM1, COM2, COM3, and COM4 modem or serial cards simultaneously. The others allow you to use two out of these four, but to use more than two COM ports they require that you buy multi-port cards.

The Major BBS is also the only one with source code available. If TBBS, DLX, PC Board, or WILDCAT! do not do what you want, you cannot modify their source code to make them do it. The C source to The Major BBS is compatible with both Turbo C and Microsoft C. It is clean and well-documented. Steve Gibson calls our source code "a software system of uncommon beauty and grace" (*INFO WORLD*, 7/31/89).

WILDCAT! and PC Board offer "doors", which permit the Sysop to add large amounts of software developed by third parties. The Major BBS, TBBS, and DLX do not offer "doors", but The Major BBS permits the integration of hundreds of add-on software products developed by third parties, at the C source code level. Add-on products available include databases, marketing tools, multi-player adventure games, dial-out utilities, and more.

The Major BBS is the only one to support true protected mode operation. The other leading BBS's are strictly real mode products, so they are limited by the one-megabyte address space native to the 8088. "Expanded" memory (EMS) is an awkward way of getting around this 8088 limitation. With The Major BBS source and the Eclipse/Ergo DOS extender, you can address up to 15 megabytes of true "extended" memory on a 286, 386, or 486—without changing operating systems.

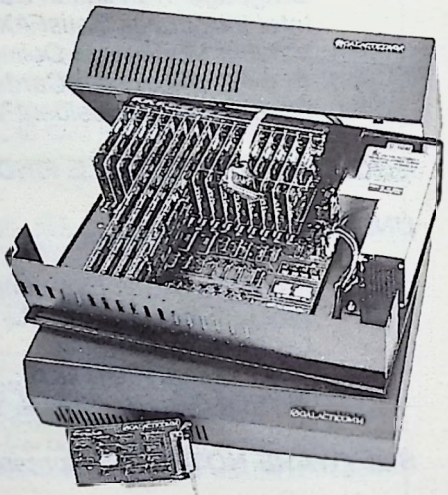
The Major BBS is the only one of the leading five to offer optional X.25 direct-connect to packet-switch networks. The others can be connected to an X.25 network through a PAD, which typically costs over $1000 per month in leasing charges, or via LAN gateways. The Major BBS with the X.25 software option talks directly to the PC XNet adapter from OST, Inc. This both improves performance and dramatically reduces cost.

Galacticomm is also unique among the five main BBS vendors in that we have solved the hardware problem of interfacing more than 32 ports to one computer. The Major BBS works both with standard COMx serial ports and modems, and with our high-capacity hardware. You can use any standard PC, XT, AT, 386, or 486 with any of our hardware products. The rising star of our hardware lineup is the GalactiBox, a 16-slot chassis which can be populated with standard 8-bit serial or modem cards at rates up to 38400 bps, to create systems that will be state-of-the-art well into the 21st century.

The Major BBS is the system you saw on the cover of the March 1990 issue of *Personal Computing*, with the caption "This Man Saved His Department $100,000". If you have dialed into the Tech Support BBS lines at Ashton Tate, AST Research, Central Point Software, or Natural Microsystems, you have used The Major BBS. Our customers include the U.S. Army, Navy, and Air Force, ten major universities, and computer industry giants such as Epson America, Autodesk, and UNISYS.

We offer inexpensive, flexible, expandable software starting at $59 for a 2-line Standard Edition. You can double the number of lines (simultaneous users) supported from that point, to 4, 8, 16, 32, or 64, for a flat $300 per doubling. The C source license to the Standard Edition is a flat $285 extra, independent of line count. Four extended editions are available: the File Library Edition (add $199 for executable license, add another $159 for the C source extensions), the Shopping Mall Edition ($249/$189), the Entertainment Edition ($149/$129), and the MenuMan Edition ($149/$129). Call for prices on hardware, the X.25 software option, our annual update service, and protected-mode toolkits.

Please call 305-583-7808 with your modem (8-N-1) for a sample of what we offer. Or, call our sister company Galactic Innovations (BBS #305-321-2410, 8-N-1) for a look at some of the add-on software available, including The Major Database and several multi-player real-time games.



The GalactiBox: 16 slots for standard AT-bus cards such as serial ports, fax, voice I/O, and modems

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EDITOR'S NOTES

A GRAPHIC INTERFACE - IT'S TIME

The online world is ostensibly dedicated to communications. Unfortunately, the tools just aren't there yet to effectively communicate. Sure, the Dave Hughes's and Dr. File Finder's of the world can use it. But for the rest of the world, the online medium is only marginally fulfilling its promise. The gauntlet new callers face to go online are just inexcusable this late in the game. Simply to get a modem and communications software setup to dial a telephone number is too complex for many people, who use computers daily for more mundane word processing tasks.

We hear from them daily. All apologize profusely for being to "dumb/stupid/ignorant" to accomplish the task without help. They are not stupid. The game is. Anyone resourceful and persistent enough to call a perfect stranger on the telephone, admit to all encompassing ignorance, and beg for assistance, has to be admired. That type of personality will learn anything it likes in this world eventually. We're forced to wonder how many have simply given up in disgust. If you don't already have access to an online "insider" you are likely to remain on the "outside" indefinitely.

And we have to question the state of online affairs that causes this fully twelve years after PC's began their dance across the web of telephone wires. The time for apologies is quickly drawing to a close. The online world can either begin getting it's technical act together, or begin getting their "I love me wall" ready to mount the memorabilia of a passing fad. The world at large is currently intrigued by what we do. If we don't welcome them a bit more warmly, that interest will fade and our modems will wind up in the closet with the CB radio, the disco glad rags, and the mood rings.

Despite the distressed and competitive position the modem manufacturers are faced with, they deserve a ready share of the blame. Modem's don't do anything without software to drive them and virtually all modem manufacturer's pretend it doesn't exist on this planet. The only concession seems to be Hayes Microcomputer Products who does at least market a communications program. In all honesty, and with sincere apologies to Hayes, Smartcom, under any Roman Numeral, is not competitive.

At least they tried. The other modem manufacturers ignore software as a matter of corporate policy. The second tier manufacturers do tend to package a diskette with their product. The Ubiquitous BITCOM. This software from hell should be banned from the planet solely on the basis of ugly. We could ignore the fact that it is useless entirely. No one should ever have to face such a mess. And a new modem buyer simply doesn't deserve this. I would guess that 75% of the el cheapo modems sold today come complete with this encoded disaster.

We're not advocating that modem manufacturers enter the software business or pay excessive fees to package good software such as ProComm, Telix, Qmodem, etc. with their products. All we ask is that they as a group acknowledge publicly that software is required to drive their product. If all modem manufacturers would simply agree to a common AT command set extension to IDENTIFY their modem's by manufacturer and model, we're confident the software developers could take it from there. The shareware communications package QModem, for example, has added a modem list to their program allowing users to pick a model from a list. The program sets up the software for use with the modem by selecting the appropriate initialization string. Nearly a 100% of new users difficulties

starting out come from having the wrong initialization string entered or more commonly, having no idea what an initialization string is or why they would want one. The remaining problems inevitably relate to difficulties getting BITCOM, faithfully included in every box, to address ANSI graphics or other terminal emulations.

But even QModem's solution is short of what's needed. If the software could query the modem, retrieve a simple ID string from the modem, and automatically select and execute appropriate initialization for that model, we would be a step closer to usability. The oft quoted problems of data bits, parity, and stop bits really aren't the problem. Almost everyone can get past that and most services provide the appropriate settings in their literature. But even those familiar with modems wrestle with initialization strings endlessly. While that may never go away completely to take advantage of the more esoteric features of the ever more capable hardware, the new user shouldn't have to go through it just to dial a BBS or commercial service.

IBM's move to provide communications software and modem built in to the PS/1 is a step in the right

direction. While we think IBM will do rather well with the machine, it won't be with the home crowd. Montgomery Ward will likely outsell IBM in that market and it doesn't take an industry guru to figure out why - price - plain and simple. A good chunk of our society may remain unfamiliar with computers, but they can count quite adequately thank you.

Prodigy has made a good effort in this area as well, but it's a crippled one. Like many corporate entities, they can't see past the bottom line. Their terminal program/modem combination is designed for one thing - accessing Prodigy. It is useless for anything else and so by design. This narrowness of vision and shrewish lack of generosity of spirit dooms them to eventual failure far more than any technical shortcomings or pricing issues.

And the true road to usability for the majority does seem to lie in a graphics interface. The trend is set. Apple and Microsoft have both thrown all troops at the GUI interface and for the most part, appropriately so. The consecrated priests of personal computers will not likely give up the command line, but the unwashed masses don't know what the command line is and neither want nor need to find out.

The attraction Prodigy has enjoyed lies with their graphics. USA Today Sports, though not a household word, has gained some kudos for their graphic interface. Even CompuServe gained a good shot in the arm with their character based - but eminently usable windowed interface, the CompuServe Information Manager. For online services to prosper, they must appeal to larger numbers of people in our society in general. For them to effectively serve even that segment that is already interested in their services, they must make it easy for those people to come on board. Clearly, a graphics interface plays an important role.

But the situation is getting worse - not better. As each service introduces their own proprietary interface, the picture grows more muddled. Do any of these services actually expect THEIR interface to become ubiquitous when it serves only THEIR online service? With tens of thousands of services available, are they really so lost in CyberSpace to imagine that ANY of their users dial them alone and no others?

Let's do a little wild brainstorming here. Let's picture a large commercial online service. Not the biggest of course. The success in market share enjoyed by any industry leader generally clouds their vision. Any change couldn't work to their advantage. We need a service with a large enough group of users to be a market for OTHER software developers. And it needs to be small enough to want to be the largest. Today, a service with about 209,000 subscribers would do. A sudden change in their pricing structure could put them in a position to gain on the leaders.

But assume their interface was a bit bland compared to the others. Now imagine what would happen if they adopted a graphic interface. Let's picture them then publishing a fully functional terminal program incorporating a graphics interface to their system. The North American Presentation Level Protocol Syntax (NAPLPS) would probably be easiest since it is an existing, published, standard. It's a tad slow but it's free. But whatever. Even if it was an entirely new, proprietary interface, this could work. Suppose they not only offered connections using such a standard, but actively promoted it by making their detailed interface specifications available to all at the cost of preparing, printing, and mailing the documentation. For the purposes of discussion, call it Z-Graphics Interface.

However well they did the terminal program, I would guess that some sweaty, Pepsi and Pall Mall sated programmer would likely try to do it one better. Further, the developers of existing terminal software might be tempted to incorporate the Z-graphics emulation in their Procomm/Telix/QM-odem etc. software. Much as ANSI became an option to ASCII in BBS systems, soon BBS developers would be tempted by the thousands of users equipped with Z-graphics. They would add Z-graphics capability to their BBS software. Shareware authors would do Z-graphics drawing programs, utilities to convert .TIF, .GIF, .IMG, .FAX, and .PIC files to Z-graphics. Soon you have a Z-graphics bandwagon going. And yes, even other competing services might follow along. This of course is the perceived danger in blazing such trails. But if you must have competitors, it is a good thing that they follow - and that you lead.

At one time, Texas Instruments wanted the entire market for software, peripherals, and add-ons to their popular TI-99/A home computer to themselves. They accomplished this very effectively with proprietary everything. Today, we could safely say that they have the entire market for TI/99A stuff to themselves. As I recall, they took about a $624 million dollar write-down on that market but it was all theirs. Apple went from garage to Silicon Valley leader with an open architecture and an invitation to all to develop software and peripherals and jump on the bandwagon. IBM came to market with a similarly "open" architecture and has obviously done very well with PCs despite the fact that there are hundreds of clone manufacturers "competing" with them. Ironically, Apple went to a very closed system - again trying to corner the market. And like TI, they are just about to corner it. The latest from Sculleyland indicates some belated softening of this stand. There is even talk of easing restrictions on Apple's family jewels, the Macintosh ROM.

The lesson is that those who establish standards and trends that allow thousands of other entrepreneurial types to prosper as well, and yes even compete with them, tend to do rather well for themselves at the crest of the wave. The concept is that a small percentage interest in the Pacific Ocean can actually be more comfortable in

the macro than complete and total ownership of a rapidly drying mill pond.

The online world in general, BBS systems included, badly needs a graphics protocol. Too many elements of communication are choked down by the narrow channel of text characters currently employed. For art, mathematics, multilingual communications, and many other tasks, our current technology is simply too limiting. To bring a larger segment of the population online, ease of use must be improved. This all points to a universal graphics protocol. CompuServe ALMOST did it. Their GIF standard for bit-mapped graphics images has become something of a standard. But it's a very slow process to transmit the massive 200K GIF files. The CompuServe CIM interface is character based and too narrow to serve as an online graphics protocol.

Of the commercial services large enough to take a technical leadership position and small enough to want to do so, GEnie is the most promising. It most acutely suffers from a lack of graphics. We are enormously encouraged by the potential of this service to draw callers given their recent daring move in pricing. Were this price move followed by a suitably impressive open architecture graphics protocol, we think they could vault beyond all competitors for the national commercial system role. And the graphics protocol could be the knockout punch.

NAPLPS is currently in use by the Canadian ALEX service, NYNEX gateway, and believe it or not, Prodigy's proprietary interface is close enough that you can read most screens with a NAPLPS terminal program now. We think the time is ripe for GEnie to move to a more attractive graphic interface. And we would urge them to do so with generosity of spirit by adopting the public textbook version of the NAPLPS standard and widely promoting its use by all comers.

ELECTRONIC DEMOCRACY - LET FREEDOM RING?

Just a brief word on electronic democracy. A recurrent theme of online technologies involves a concept of participative democracy. The idea is that at some point all voters will be electronically connected to the seat of government. Given any issue, technology would allow all those with an interest to very conveniently "vote" and in this way, we could all decide even minor issues by electronic referendum. Sort of instant electronic democracy in action. National elections each day at 7:00 PM - to be followed by Doogie Howser.

I confess I'm not particularly taken with the concept myself. Wild swings in public sentiment orchestrated by pancake-faced TV eunuchs driving our nation first in one direction and then another doesn't appeal to me in any profound sense. I implicitly distrust the fickleness of the herd.

I much prefer the image of our wisest and sagest citizens, somberly assembled to carefully consider the issues of the day, taking into account all possible implications, arriving at a considered consensus and thoughtfully implementing a profoundly inspired "plan" for the future - with but a mild acknowledgement to the current fads of the moment.

Given the current state of affairs in government, I can only say that however these elder statesmen strive to make a jackass of me and my simplistic point of view, for the time being I'll cling to it.

But I couldn't help noticing the progression of events regarding the recent budget summit. President Bush and the summit-ees came out with a plan - read my lips - and presented it to Congress and the American people. A few in Congress questioned the plan in that it had the usual democratic party mix of "give us a tax increase now and we promise to cut spending later. That makes us even, right?"

On this one question, the television networks did not go on the attack, they even seemed supportive. But they did announce a couple of important telephone numbers. George Bush at **(202)456-1414**, the White House Public Opinion line at **(202)456-7639**, and Congress at **(202)224-3121**. A scant handful in Congress stood to be counted, and overall there was not much hoopla. Except for the telephones. They forgot to shut off the telephones. And they did ring.

Personally, I think a trillion or so a year ought to be enough to run one government and the concept that they "need" a tax increase is preposterous. The fat cats aren't avoiding taxation by the government - they're in the government.

On the other hand, I like the idea of taxing consumption of alcohol, tobacco, and gasoline rather than income. While I drink, smoke, and drive with the best of them, the tax would become somewhat optional in a way. I could bicycle through the Colorado blizzards, drink a bit less, smoke a bit less, and pay a bit less. By contrast, taxes on income encourage me to do a lot of looking out the window toward the end of the year. Sort of a "another day older and what do you get" mind set.

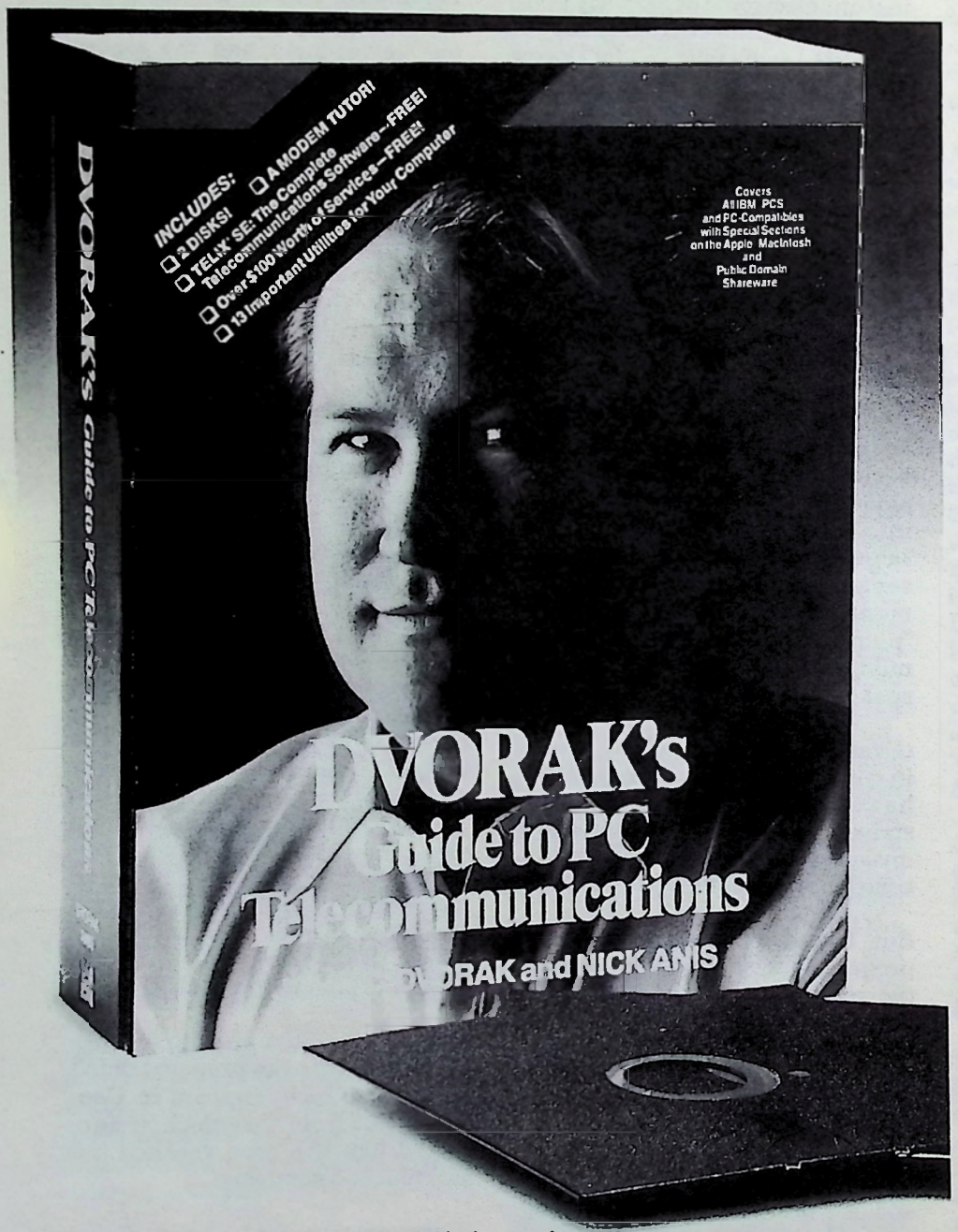
But the point is moot. Congress was frozen in its tracks by a deluge of telephone calls. Whatever debate was in progress stalled. The budget summit recommendations died and it wasn't even a long and painful death. American's did vote electronically. And it was frighteningly effective. They didn't offer an alternative plan of course - leaving Congress mired in a budgetary mess. But they did kill the summit's plan rather quickly.

Maybe it was just prior to an election. Or maybe the proposal didn't really ever have support in Congress. But from this chair, it sure looked like the herd reached out and touched someone.

However you feel about direct Jeffersonian vs. representative Hamiltonian democracy, technol-

Wise Guide.

Dvorak's Guide to PC Telecommunications



by John C. Dvorak and Nick Anis • Foreword by Peter Norton

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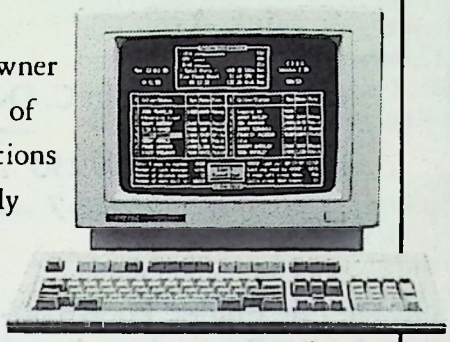

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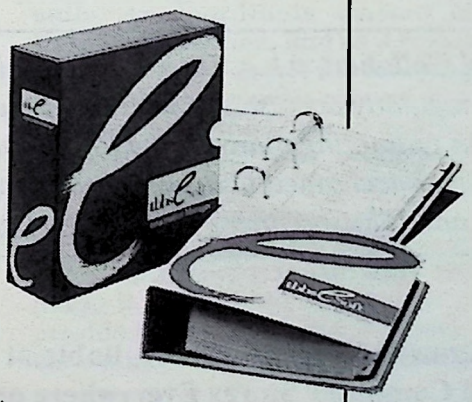

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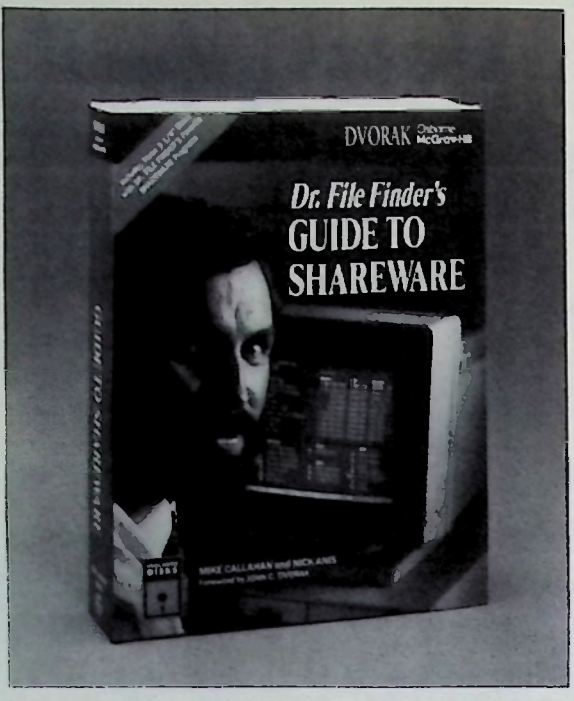

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Nobody knows Shareware like the illustrious Dr. File Finder, known off-line as Mike Callahan. Now, in Dr. File Finder's Guide to Shareware, a new book/disk package in the Dvorak/Osborne series, you can learn about dozens of leading Shareware programs, including where and how to get them.

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About the Authors: Michael Callahan, a.k.a. Dr. File Finder is the world's leading authority on Shareware. He regularly accesses thousands of bulletin board systems and has been a major force in promoting many of the top Shareware packages. Nick Anis is co-author of several acclaimed bestsellers including Dvorak's Guide to PC Telecommunications, and Glossbrenner's Complete Hard Disk Handbook.

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ogy has put us in a position to both reach and express a group consensus with startling speed. We can expect that technology, and capability, to grow over the next few years. It might be worthwhile to give some thought to the implications. Who protects the individual from being trampled by the thundering hooves of the herd? Did our founding fathers really intend to let freedom ring?

Jack Rickard
Editor

TELEBITS

NYNEX PAYS OFF FCC

Nynex Corporation has agreed to pay $1.4 million to the U.S. Treasury and cut interstate access rates by $35.5 million under the terms of a consent decree signed between the FCC and Nynex. In exchange, the FCC will drop proceedings against New York Telephone CO. and New England Telephone and Telegraph.

Apparently, an unregulated subsidiary of Nynex, their Material Enterprises Company, overcharged the telephone companies in question some $118 million for equipment between 1984 and 1988. The charges were then figured into their rate structure and passed on to their telephone customers.

Essentially, the rate you pay for local telephone service is based on their costs to deliver services. Nynex was able to claim much higher costs, while at the same time profiting from them by buying the equipment through Material Services Co. which systematically overcharged them. In this way, they were able to raise their rates based on the inflated costs. Since local telephone companies are granted a monopoly to provide telephone services, their rates and profits are subject to regulation. Nynex subverted this scrutiny by shifting income from their regulated service to an unregulated arm of their company. The result was much higher profits hidden in Material Services and what appeared to be legitimately higher rates for subscribers.

Nynex had the temerity to deny all wrongdoing and claimed the FCC was misinterpreting their own rules. When this ploy failed they claimed "they" didn't understand the rules and the FCC should have provided "timely guidance". In other words, "if you intend to punish is when you catch us, you should catch us earlier so we don't have to pay so much."

The nature of the agreement is essentially that Nynex will pay the financial penalty for being guilty as long as the FCC doesn't proclaim them guilty. All five FCC commissioners approved the consent decree, but at least one publicly announced that the matter should have been pursued to the point of guilt or innocence. The company remains under investigation by both the U.S. Justice Department and the New York Public Utilities Commission on other matters.

The calculations involved in establishing local telephone company rates are made intentionally complex by the endless legal maneuvering of the telephone companies themselves. The game seems to be, if you get away with it, it's ok. If you get caught, pay the disputed amount and try again. Local telephone companies are fiercely battling to raise local rates, and carve up local calling areas into zones they can charge as long distance calls. An inordinate amount of their organization, and as a result their costs, are devoted to lobbying for and figuring ways around regulations allowing them to do this. Most illustrative was a quote in Networld from Toby Webbe, Nynex vice president, government affairs. He didn't say anything notable, or even that made sense. But we found it notable there was a vice president for government affairs. How many other people at Nynex are devoted not to providing telephone service, but to dealing with the government.

At a time when their true costs are actually declining due to lower equipment prices, better employee productivity through technology, and just better technology, the local RBOC seemed fixated on the concept of getting more money from local subscribers by any method, moral, legal, or not, anyway. US West recently filed for a substantial rate increase based on apparently nothing more than a desire to have more of their rate payer's money.

The FCC is avoiding responsibility with these quick buy-off fixes. Where the telcos are found to be illegally fabricating data to defraud their subscribers, they should not only be nailed to the wall as a company, but individual officers of the firm should be forced to trade in their three piece suits and Peugots for the honest work clothes worn by all the other inmates at Joliet Federal Penitentiary. Instead, share owners in Nynex are tagged for the $1.4 million. The executives responsible for this deception don't miss a lunch. We would urge the FCC to either do their job regulating communication monopolies, or dismantle them and let every man with a 1963 wire truck and a rusty pair of pliers offer local telephone service.

RUMORS, MIGHT BE'S, NUMBERS CAUGHT IN PASSING

IBM's PS/1. Every columnist in the country is calling it a failure - probably in an attempt to keep from getting burned as they did on the "peanut" IBM Jr. a few years back. Dvorak calls the new run at the ethereal home computer market "weenie computers." Rumor has it that even IBM is surprised at the success of the machine early on. They can't make them fast enough. More surprising - the bulk of the orders are coming from IBM's dealer channel - not department stores. These are the same dealers that told IBM in no uncertain terms they wanted NOTHING to

do with the machine. Now they're fighting for allotments. What's it all about? We're not sure, but we can conjecture a bit. Despite the fact that THEY DON'T WORK, everyone is moving to LANs. For most businesses, the PC revolution has actually been a way to reinvent the mainframe in modular fashion. Everyone is LANning up. IBM's PS/1 may be the least expensive, most flexible, low cost LAN workstation available for shops determined to remain true blue.

We've collected a few telephone numbers of interest. Most are for voice calls but all are interesting:

George Bush	(202)456-1414
White House Public Opinion Line	(202)456-7639
Congress	(202)224-3121
Mikhail Gorbachev	(011)7095-205 2511
Queen Elizabeth II	(011)441 930-4832
Pope John Paul II	(011)396 69 82
Vatican Radio Inspirational Message	(011)397 779-3030

Does anyone have Saddam Hussein's number?

Broadcasting Ltd., a television production company in Philadelphia has announced a 900 number where callers can record a two minute message to U.S. troops stationed in the Middle East. The call costs **$2.50. 900-321-4USA**. The messages are delivered on audio cassette tape. For more info, **(215)735-5436**.

Toshiba has announced production of a new 43 MB hard disk drive in the 2.5-inch size suitable for use in the growing laptop/notebook computer market. The MK1122FC drive will begin production in April. Toshiba has used Conner drives in their own laptop products in the past. The new drive will be produced in Toshiba's Ome plant in Tokyo.

Apple's introduction of a new low cost line of Macintosh computers may signal a larger change in climate at the company. Apparently, the perception that Windows magically changes an IBM clone into a Macintosh, while grossly untrue, has been effective. Apple is looking to Japan for a laptop version, is making overtures to third party vendors, and has even internally discussed the possibility of sharing their precious ROM jewels with the world under limited circumstances. Mac clones? Not likely. But some move toward a kinder, gentler, Apple may be in the works. Their stock price has lagged sadly in recent months and there's nothing like a little shareowner discomfort to motivate change.

HAYES ENHANCED SERIAL PORT SHIPPING

Hayes Microcomputer Products Inc. has announced immediate worldwide availability of their Enhanced Serial Port (ESP) for IBM compatible computers at a retail price of **$299**. The company expects to provide a **$349** microchannel version by the end of the year.

Hayes ESP is a dual-port communications coprocessor for PCs which off-loads the system's responsibility for managing the high speed flow of data for external serial devices.

The ESP addresses a problem arising from the newer higher speed modems. An interesting, and previously unexpected problem arises from data rates above **20 kbps**. At the time the original IBM PC was designed, no one expected analog telephone lines to ever support data rates beyond 9600 bps. The **8250 UART** (Universal Asynchronous Receiver/Transmitter) serial port chip included in most early computers was unable to reliably deal with speeds much beyond the 9600 bps rate. Most AT class machines today use **16450 UARTs** that perform considerably better but still have some problems above **19,200 bps**.

The data rate in question is actually between the computer and the modem, not the modems across the telephone lines. With today's **V.42bis** error correction/compression, it is quite possible to pass data between PC and modem at **38,400 bps**.

The solution has been to replace the **16450** or **8250** with a pin compatible replacement such as the National Semiconductor **16550AN**. This chip includes 16-byte transmit and receive buffers that are considerably more forgiving. By buffering the data, the **16550** ensures none is lost while the PC is fumbling around with other operations.

The Hayes ESP card provides two serial ports with **16550 UART** chips that can very effectively handle the higher speed modems. The ports work well with all existing communications software and modems in that mode. Additionally, Hayes has incorporated a **Direct Memory Access (DMA)** controller and a **1K RAM** buffer that effectively extend the 16-byte buffers in the chip. The DMA can write data from these buffers directly to the disk. The result is reliable data transfer through both ports simultaneously at up to **57.6 kbps** with overrun protection. Each port can operate at up to **115.2 kbps** without overrun protection. To use this enhanced feature, you must have software designed to take advantage of it.

A handful of software vendors have announced support for ESP's DMA enhanced mode including DataStorm, publishers of the popular Procomm Plus terminal program. Future releases of Procomm Plus will support the enhanced mode. Hayes own Smartcom III and Smartcom Exec support the ESP. SoftKlone's Mirror III version 2.01 supports it as well. Hayes is also supplying drivers with the card to work with comm software such as REXXTERM, HyperACCESS/5 for OS/2, and DynaComm Asynchronous Edition for Windows.

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With the advent of 14,400 **V.32bis** modems just around the corner implying port data rates of **57,600 bps**, and perhaps through new telephone services such as Integrated Services Digital Networks (**ISDN**), data rates are going higher yet. Multi-tasking operating systems such as OS/2 and Window place a further load on the serial port. Hayes ESP may be the answer. We find it of note that in addition to marketing the product, Hayes has generously released the specification for ESP into the public domain, encouraging other vendors to adopt the technology. Hayes maintains an outstanding multi-line toll-free product support bulletin board system at **(800)874-2937** using The Bread Board System (**TBBS**) software by eSoft Inc. Hayes Microcomputer Products, Inc., P.O. Box 105203, Atlanta, GA 30348; **(404)449-8791** voice.

FOOTBALL BROADCAST HOTLINE

AT&T and TRZ Sports Services have joined forces to produce an 800 number service allowing out of town fans to listen to live play-by-play radio broadcasts of 22 NFL football games and 30 college team's play action during the 1990 season.

Each team features their own 800 number. The calls are not free. Callers key in their Master Card or Visa number and pay a very odd variable rate that depends on the amount of time online. A three hour game would cost about **$36.** Contact the TRZ Telephone Broadcast Service Information Line at **1-800-CALL-321** to obtain the 800 number for a particular team John Lindesmith, TRZ Sports Services, **216-678-8386**

FAX ATTACHMENT FOR LASER PRINTERS

Tall Tree Systems has announced a device that receives facsimile transmissions and prints them on a Hewlett-Packard II, IIP, or III laser printer or suitable clone. The **FAX-O-MATIC**, is actually an independent device that T's in between your PC parallel printer port and the parallel port on the laser printer. An incoming fax is printed out on the laser printer. The device does not interfere with normal PC print operations. Further, the PC doesn't even have to be on for it to work.

The device contains an internal **512K** RAM memory buffer suitable for storing up to **30 pages** of incoming material along with the usual AC power and telephone line connections.

Normal fax machines print on slimy and expensive thermal paper. Plain paper faxes start at around **$4000**. The **$399** FAX-O-MATIC looks very good in that en-

vironment. While a similar Jet Fax product has been available for over a year, it was priced in excess of $1000. If you have a laser printer and have been shopping for a dedicated facsimile machine, this unit would likely save you a couple of hundred dollars, and provide much better printed output. It is however, limited to incoming calls with no fax transmit capability. Tall Tree claims FAX-O-MATIC is available now. Tall Tree Systems, 2585 E. Bayshore Road, Palo Alto, CA 94303; (415)493-1380.

PLUG YOUR FAVORITE KEYBOARD INTO ANY LAPTOP

Genovation Inc. has introduced an adapter that allows you to connect any IBM compatible keyboard into any laptop via the serial port. **Serial Box** is a **$99.95** device that provides direct connections for a standard keyboard and a serial cable to the laptop's serial port. A **12K** software driver is loaded into memory and uses key scan codes received over the serial port to control the machine. This precludes using the same serial port for modem or mouse. But with laptops increasing in hard disk storage capability and usually featuring an external monitor port, you could have your favorite keyboard and monitor at the desk and just plug in the laptop to have desktop comfort and laptop portability. Genovation Inc., 17741 Mitchell North, Irvine, CA 92714; **(714)833-3355.**

INTERNATIONAL TELEPHONE JACK ADAPTER

High-Tech Resources has introduced a series of telephone adapter cables with an **RJ-11** plug on one end and any of a number of appropriate plugs for telecommunications connections in foreign lands on the other. Models are available for Australia, Denmark, Finland, France, Germany, Italy, Japan, Russia, South Africa, Sweden, and the United Kingdom.

The International Telephone Converters are priced at **$14.95** each and should make it easier for global road warriors to make the connection. High-Tech Resources **(800)422-2832.**

MONTGOMERY WARD - A FORCE IN PC RETAILING?

No. It hasn't happened yet. The empire of the 60-month car battery and land of the $129 dinette is not yet a power in the computer world. But they might be soon. Kevin Behrens of Aquila BBS put us onto this and we didn't believe it at first. But it does seem to be real - if often out of stock.

Montgomery Ward, the stodgiest, most backward retailer in the free world, has joined the PC revolution. They are currently offering a product titled the **HeadStart LX-CD.** Let's start with the unimpressive and build from there. It's a 10 MHz XT. But, it does come with a 40 MB hard disk, a 3.5-inch floppy, 768K RAM and VGA graphics. And like the Ronko Bamboo Steamer - "wait, there's more."

The system also features a three button mouse, a 101-key keyboard, five expansion slots, serial and parallel ports. But that's not all! It also features a stereo headset/speaker jack AND the stereo headset. What for you ask? For the included **680MB CD-ROM** drive which includes **AUDIO** capability. The Sony drive plays data CD-ROMs or audio CDs. Now you can listen to **Pachelbel Canon in D** while you write the great American Novel. But wait - there's more! Tell them about it Jay!

The system comes with a remarkable variety of CD-ROM data including Grolliers 21-volume Academic American Encyclopedia. Microsoft Bookshelf provides a complete reference library including dictionary, almanac, Bartlett's Quotations, Chicago Style Manual, Roget's II Thesaurus, and Spelling Checker. Hot Line Two provides a telephone dialing directory with **110,000** telephone numbers of the most often called businesses and organizations. PC Globe provides atlas and facts on 177 countries. ACD guide provides a reference to all CD audio disks available, along with a graphic of the cover art and an audio sample of each one.

The system comes with a variety of more mundane operating software including XTree, GW Basic, Publish-It, and the HeadStart Office Manager. To setup the system, you boot the system from a 3.5-inch floppy. All software is copied off of CD-ROM onto the hard disk and installed, organized, etc.

What is most stunning about this system is the price - **$788.** The Sony CD-ROM/audio unit alone lists for **$795** as a peripheral. The CD-ROM's included with the system list for twice that and the Microsoft Bookshelf and Grolliers are the first and second ranked CDs in sales in the industry. Monkey Words throws in the computer for free. The only drawback? We've called three of them. They all carry them. They should have some more in at the end of the month. They can't keep them in stock. The computer units themselves are manufactured by Phillips.

SOFTWARE SENDS, RECEIVES MESSAGES VIA FAX, TELEX, TWX, MODEM

(BBS Press Service) -- IBM PC users can now send or receive messages by Fax, Telex, TWX and modem from anywhere in the world at any time with one integrated software program, **Via PC Telecommunications Software.**

Unlike programs which offer only one communications action -- or at best, two -- Via PC Telecommunications Software combines four functions into one package with a common interface, which makes the program easy to learn and use.

The program is for people who use laptops on the road and must send and receive error-free reports with their host computers, departmental fax machines and client telex machines overseas.

The product also handles Telex and TWX messages, a must at large corporations which do business internationally with firms in other nations that have outmoded telephone systems that cannot deliver Fax or Modem transmissions reliably.

Via PC Telecommunications Software allows consumers the flexibility to use its built-in text editor or their favorite word processor to compose, edit and read messages.

By giving users control over documents, the software improves the accuracy of transmittals and receptions since the messages do not need to be retyped, which could introduce typing errors, as is most often necessary with dedicated Telex and TWX machines.

Users can send faxes by creating messages and transmitting them through their modem and phone line to any store-and-forward service which provides fax transmission, such as MCI Mail, Western Union EasyLink, or International Data Refile, IDR UniCom's sister company. If direct fax transmission is desired, Via PC also has an integrated linkage for fax boards, thus providing for transmission of graphic files, as well as text files.

Via PC supports such popular features as a dialing directory, broadcasting, send/receive Faxes and Telex, TWX or modem communications, Fax transmission occurs in the background, which frees PC users to perform other productive tasks without tying up computers.

The program also offers a comprehensive database of area codes for dialing into each country's voice, data, Telex and Fax networks. This database is not available anywhere else.

Via PC Telecommunications Software works with any IBM PC XT/286/386/486 or 100-percent compatible computer equipped with 640K RAM, any modem and phone line, and any monitor. A fax card is optional and a hard disk is recommended. The retail price, direct from Via PC, is **$595**. IDR UniCom Incorporated, 400 Stenton Avenue, Plymouth Meeting, PA 19462; **(215)825-8188.**

THE COMPLETE PC REDUCES FAX BOARD PRICES

(BBS Press Service) -- The Complete PC is reducing the retail price of its leading fax board products by **22-38** percent, effective Oct. 4. The company is also increasing the warranty for all of its board level products, from two years to five years. In addition, The Complete Fax/9600 will include a free 2400 bps data modem.

The price reductions affect three of The Complete PC's fax board products. **The Complete Fax** has been reduced by **$150** and will now carry a retail price of **$249**. The **Complete Fax/9600** has been reduced by **$200** to a retail price of **$499** and now includes a 2400 bps data modem. The company's flagship product, **The Complete Communicator**, has also been reduced by **$200** to a retail price of **$699**. Each of The Complete PC's fax board products will also now carry a full five-year warranty.

"Given our growth in the market during the past year, we have been able to achieve major economies of scale which have allowed us to reduce our costs and provide additional features," said William F. X. Grubb, president and chief executive officer of The Complete PC. "Our ability to incorporate additional functionality and to pass these savings along to the consumer should enable more and more users to enjoy the advantages of computer-based fax."

The Complete PC has seen increasing demand from fax users who want to be able to send and receive faxes directly from their computer. This increase has been significant in the small business and home office environment and is now appearing in several vertical markets.

All of The Complete PC's fax board products include hardware, full-featured menu-driven software, telephone cable, user manual and a five-year warranty.

"Since the concept of PC fax has been so quickly adopted by the market, we want to make sure that every PC user can take advantage of this technology right from his/her PC," said Grubb. "We believe that our new product and pricing will be an attractive incentive for someone to add fax capability to a PC. Even more importantly, our Complete Communicator gives a user a fax modem, data modem, scanner port, voice messaging and fax forwarding all on one card, using a single telephone line, for only **$699**." The Complete PC, 1983 Concourse Drive, San Jose, CA 95131; **(408)434-0145.**

MILLICOM STUDY FINDS 40% OF ALL U.S. HOUSEHOLDS WOULD LIKELY SUBSCRIBE TO PERSONAL COMMUNICATIONS SERVICES

(BBS Press Service) -- A study conducted by Arthur D. Little Inc. for Millicom has indicated that as many as **40 percent** of all U.S. households are likely to subscribe to Personal Communications Network (PCN) services.

PCN is expected to be the next generation of portable, mass communications. PCN handsets will be low-cost, wallet-size, lightweight, and low-power and will incorporate microprocessor-based smart-card technology. Once the user inserts the smart-card in any handset, the user can be reached even if the caller doesn't know where the user is.

The study indicated that the public's interest in PCN cuts across all income levels, including lower and middle income Americans, and bears no relation to age, gender, marital status, employment or residential location.

Arthur D. Little undertook a comprehensive, nationwide market study of 600 households and 400 businesses between Aug. 1 and

Sept. 15. An additional 100 households each were also interviewed in Houston, TX and Orlando, FL, sites of Millicom's experimental PCN operations. The study characterizes the demand level for this new service as "astonishing."

In Houston, respondents almost universally say they would subscribe to PCN at the lowest price level. In Orlando, interest is **40 percent** more than in the national sample. Even at the highest price levels for service and handsets, demand in Houston and Orlando is 50 percent greater than in the national sample.

According to Arthur D. Little, the highest demand in Houston and Orlando probably reflects publicity received in those cities following announcement of Millicom's FCC authorized field trials. Therefore, Arthur D. Little concludes that demand for PCN may be even higher nationally than reflected in their survey -- that education of consumers will result in more subscribers both initially and in the long term.

Arthur D. Little's survey finds that many business users are also likely to subscribe to PCN services. More than one in three firms indicated they will buy PCN at the lowest level of monthly premium and handset price, one in four at the highest level, and 68 percent of these users will subscribe to PCN within one year of availability

Demand for PCN does not deviate materially by business type. Demand for PCN is so significant among business users that nearly 30 percent indicated they would replace telephone service when they subscribe to PCN and nearly 40 percent would drop their existing cellular service.

The results of the survey also indicate that demand for PCN is immediate. Within one year of PCN's availability, 75 percent of likely residential customers and 68 percent of likely business customers will subscribe to the new service. Moreover, two-thirds of likely residential PCN subscribers and three-fifths of likely business PCN subscribers now using cellular expect that PCN will replace existing cellular service.

Arthur D. Little's findings are included in Millicom's comments which were filed October 2 at the Federal Communications Commission (FCC), in response to its Notice of Inquiry (Docket Number **90-314**), which was issued to develop policies for new personal communications services. Millicom was awarded experimental PCN licenses by the FCC in Houston, TX and Orlando, FL. For more information, Contact: Millicom Inc., **(212)475-8200.**

LANGUAGE TRANSLATION SOFTWARE

Final Soft Corp. is introducing a new language translation software program titled **TRANSLATE** to translate any English ASCII text file to Castilian Spanish. The program contains an **85,000** term dictionary but deals with text on a phrase basis rather than word for word to produce a reasonably good translation. The phrase dictionary is expandable and a split screen mode allows users to enter individual phrases for translation. The program can be run as a batch process to, for example, translate E-Mail messages. The TRANSLATE program is $495 and Spanish is the only language currently supported. Final Soft, 3900 NW 79 Ave., Suite 215, Miami, FL 33166; **(800)232-8228.**

Old Colorado City Communications is offering a similar system for the French language. The **Global Translation System (GTS)** translates French to English or English to French syntactically much like Final Soft's TRANSLATE program. An ASCII text file is read into the system, processed, and output in the other language. There are two modules, one English-French and the other French-English at **$995** each. Old

Colorado City Communications, 2502 West Colorado Ave., Suite 203, Colorado Springs, CO 80904; **(719)632-4848.**

Both programs do a passable job of translating simple business correspondence. But they are hardly error free. Even dealing on a phrase-by-phrase basis rather than word-for-word, the results can be unpredictable. Generally, if you start with a file in the unknown language, translate to your own language, and have a good contextual concept of the subject matter, you should be able to edit the results in your own language without too much guesswork.

INTEL INTRODUCES SATISFAXTION FAX/MODEM CARD

Intel Personal Computer Enhancement Operation **(PCEO)** has announced a **$495** fax/modem card featuring a 2400 bps MNP 5 modem, 9600 bps Group III fax, and scanner port. The product comes with a free copy of Alien Computing's FAXIT for Windows allowing users to fax information as easily as printing it by sending it to a printer port. A popup menu then prompts for the fax number. Intel PCEO, 5200 NE Elam Young Parkway, Hillsboro, OR 97124; **(503)629-7227.**

V.32bis MODEMS TO DELIVER 14,400 bps AND FAX

Rockwell International has actually provided the base technology for many of the advances in telecommunications in recent years. The company manufactures chip sets for various products. Their **V.32** chips paved the way for lower cost 9600 bps modems - including the U.S. Robotics V.32 and Dual Standard models.

The company recently announced several interesting products, including a 14,400 bps fax circuit, and a fax/modem circuit providing the first implementation of the new 14,400 bps **CCITT V.32bis** modem standard.

The new fax board unit, termed the **R144EFX**, is part of Rockwell's Monofax line. The unit can transmit data at 14,400 bps - approximately six pages per minute - via normal voice grade telephone lines. Almost all fax systems in use today transmit at 9600 bps or roughly four pages per minute. The board is pin compatible with their own earlier 9600 bps board, used in many current fax machines.

The company also introduced a fax/modem board termed the **RC9696/14** data pump. The new board provides the first silicon implementation of the **V.32bis** communications standard for 14,400 bps modem communications. The board also supports **CCITT V.17** group III facsimile technology. The board falls back to speeds from 300-12000 bps and is compatible with earlier communications standards including **V.32** (9600 bps), **V.22bis** (2400 bps), and **V.22** (1200 bps). This board includes a five year warranty and a price of **$245** in 10,000 unit quantities. Undoubtedly, this will be the shape of **V.32bis** modems to come. Perhaps even better, the board is pin compatible with the earlier **RC9696/12** board used in a number of modems to implement 9600 bps **V.32**. The result? We may be able to upgrade existing **V.32** modems to **V.32bis** quite easily.

ADD PC EXPANSION CARDS TO TOSHIBA LAPTOPS

The new line of Toshiba laptops, including 1000SE, 1000XE, and 1200XE have become immensely popular based on their usable keyboards, excellent display's, and very light weight. One luxury some of the larger laptops offer is a single expansion slot to accept PC expansion cards. To add high speed modems, network cards, fax cards, etc., users simply plug in an ordinary peripheral card. Toshiba's have not offered this feature and in fairness, you can't be all things to all people and do any of them particularly well.

Connect Computer has announced a device termed the **Wonunder Cradle** for the Toshiba line. We're not certain if this allows you to plug a PC expansion card into a Toshiba or if it allows you to plug the Toshiba into a PC expansion card. But it does let you marry the two somewhat gracefully. The device is **$399**. Connect Computer, You might view this as a docking unit or an add-on peripheral. Either way, it allows you to plug in a PC expansion card to the Toshiba. Connect Computer, Minnetonka Hills, MN 55343; **(612)944-0181.**

GLOBAL DIALOG PRESIDENT VISITS COLORADO SPRINGS

Dr. Sergei Alexandrov, president of the recently formed **Global Dialog Association**, visited Colorado Springs this past October 4-7 as part of a tour of the United States sponsored by AT&T. Dr. Alexandrov recently left his position with the Novosti Press Agency in the U.S.S.R. to form the Global Dialog Association, a group largely formed online. He had also previously worked for the Soviet Institute of Automated Systems for several years.

Global Dialog is designed to ease the connection between some 90,000 organizations within the Soviet Union, and their counterparts in the west using online technology to puncture the current barriers in communication between the U.S.S.R. and small companies in the United States and other countries. The group currently offers market research and direct mail activities to the 90,000 internal organizations through the Moscow City Center for Scientific and Technical Information. They're assisting in transferring information between Moscow State University and various ecological groups worldwide regarding a Volga River ecological project, and they intend to assist in marketing Russian software programs in the west. Projects currently under study include a Peter the Great cultural and craft center, bear hunting expeditions in Yakutia, and a Mother and Child health care project.

Dr. Sergei Alexandrov of Global Dialog Association

One interesting product Dr. Alexandrov demonstrated was a word processor titled **ISODI-RED** and it's associated **FAST** communications program. **ISODI-RED** offers an interface much like Microsoft Word. However, the user can quickly switch between English, French, and the 33-character Russian Cyryllic alphabets.

The characters actually appear on screen in any alphabet and the drop down menus and prompts even change to the appropriate alphabet. The program also features a popup dictionary that operates much like Borland's Turbo Lightning program. But it will actually translate words between the three languages.

If you were typing a letter in Russian for example, and you couldn't remember a particular Russian word, simply enter it in English, pop up the translator, and it will do the conversion for you. The communications package has the ability to transmit and receive files using the three alphabets as well. The package is priced at **$385.**

The group is very interested in marketing Russian products and services to groups in the United States. But much of the exchange would have to be done in a fairly complicated barter transaction. Currently, Soviet rubles are not convertible to any other currency and in the past, Soviet citizens faced stiff penalties for even owning hard currencies from other countries. While this has relaxed somewhat, few Russian groups have hard currency in any quantity. One recurrent theme involves long distance contract work by the fairly accomplished body of Russian software programmers at very reasonable rates.

Global Dialog is actually formed under a 1901 French law covering non-profit organizations and the legal home of the association is in France. Membership is available to individuals at 300 French Francs (about $50 U.S.) and 3000 FF for organizations. The initial communications medium is via a German E-Mail service titled Geonet. The group's e-mail address is **GEO1:GDA-MOSCOW.** At a Saturday morning press conference at Colorado Spring's Meadow Muffins Bar, Dr. Alexandrov demonstrated an e-mail transmission by dialing the local Telenet node, connecting to GEO, and sending and receiving e-mail from their Moscow office. Two single screen messages resulted in online charges of about 5 Deutsch-Marks. Those interested in a Geonet account can contact Geonet, Inc., 400 Oyster Point Blvd., Suite 325, South San Francisco, CA 94080; **(415)952-1100.**

By the end of the year, Dr. Alexandrov hopes to have a host system in operation in Moscow with both **X.25** packet switch connections and a direct dial asynchronous port using a **Multitech 9600 bps V.32** modem. At that point, you would be able to dial up what will basically be a Global Dialog Association bulletin board to inquire about specific opportunities for trade. Dr. Sergei M. Alexandrov, Global Dialog Association, 4, Zubovskii bulvar, ap. 6026, Moscow, 103786, USSR; **7 095 201-23-08** voice; **7 095 230-26-67** fax.

BOOK REVIEW - DR. FILE FINDER'S GUIDE TO SHAREWARE

Dvorak Osborne/McGraw-Hill has released what will undoubtedly be the largest selling book on the shareware software phenomenon to date. The book sold **12,000** copies in backorders before the first copy was actually assembled. The first print run, variously rumored to be **15,000** or **22,000** copies, was gone in the first week. The second print run is in short supply and they're going into the third printing at this writing. Dr. File Finder's Guide to Shareware may become one of the surprise hits of the computer book publishing industry.

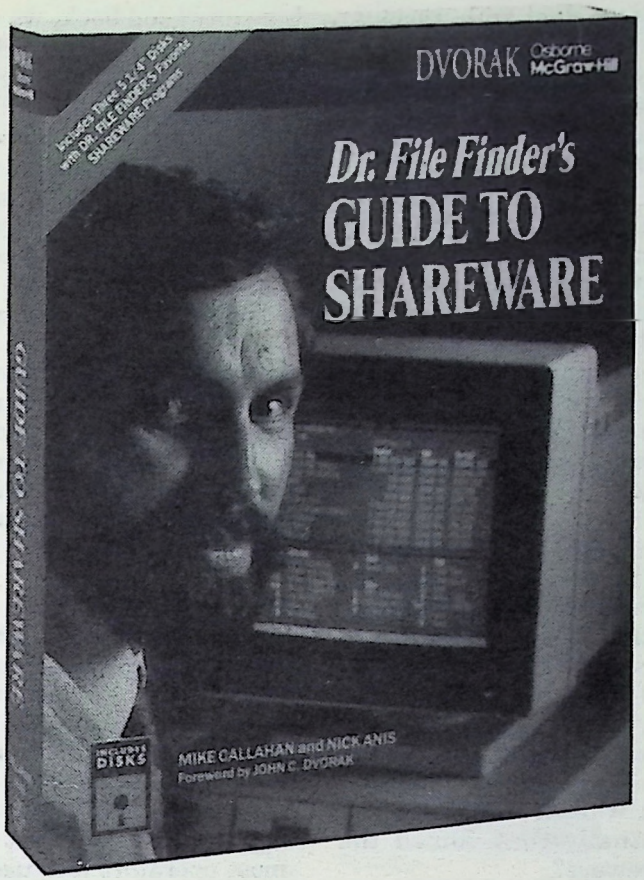
What's causing all the stir over yet another shareware title? With the lone exception of some of Glossbrenner's work, most shareware books in the past have either been a bit crudely done, or largely consisted of a disk vendor's catalog with a cover on it. With the current interest in things online in general, it may be time for a rea-

sonably thorough, professionally prepared guide to low cost software. But there could be more to it than that.

Mike Callahan is Dr. File Finder. The name came into being early in his online career as an on-line alias. Mike was completely disabled a decade ago by a series of eleven strokes that paralyzed the left side of his body most thoroughly and by all accounts should have killed him outright. Through physical therapy, he regained much of the use of his body, though he still tires easily. Physical therapy brought something else - contact with the world of personal computers.

After encountering PCs in the hospital, Mike picked up one of his own. His career ended, living on disability, he had too much time to mull the sometimes vicious vagaries of life. Fortunately, PCs tend to be time alligators and he found himself distracted with the new beast in the basement. He soon discovered the on-line world through the now defunct SOURCE online service and from there, graduated to BBS systems and a new vocation - shareware.

For the past eight years, the man has been a student of a fascinating development not only in software but in the very concept of marketing and distributing products. Shareware has been enormously successful in connecting authors, who have neither the financial resources or savvy to market software effectively, with PC owners, who may have neither the software skills or money to obtain thousands of programs to effectively use their computers. The resulting underground economy in software has resulted in some 85,000 titles that are essentially free to the user - at least for evaluation purposes - and a new frontier where a man with an idea and a willingness to work hard can build himself into economic independence starting with no money and no resources - the quintessential American Dream.



Callahan followed the shareware developments as a full time unpaid endeavor and earned an almost mythical reputation as the Johnny Appleseed of shareware. When he located a title he deemed deserving by virtue of its technical elegance or creative concept, he would industriously promote it by uploading it to hundreds of bulletin boards, posting online electronic reviews, etc. He logged onto thousands of BBS systems across the country and examined thousands of programs in detail. Over the years he amassed an amazing collection of the best titles, and an encyclopedic grasp of who was doing what to whom in the world of shareware software development.

While most of the shareware titles in recent memory were written by professional authors who would write 600 pages on electric shavers for a $10,000 advance, Callahan has devoted the past eight years of his life to shareware and in this, his very first book writing effort, shares that with us. The result is a printed account of a love affair between a lone, cruelly damaged man and the quirky quasi-industry that gave him a reason to get up in the morning - and thereby most probably life. The result borders on poetry - unusual in the world of bits and bytes. Callahan loves shareware, and it comes through on every page.

It's interesting to note that Callahan does most of his work from a rustic log cabin home wedged between the towering pines of rural Elizabeth Colorado - a strikingly pastoral scene. His two daughters aid in cataloging the hundreds of shareware disks sent by aspiring shareware authors. His basement office hides the requisite trail of overflowing ashtrays and empty Pepsi cans necessary for success in the field. And after years of unpaid work in shareware, he modestly aspires to enough income from the books to get off his disability income from the government.

Dr. File Finder's Guide provides 1019 pages of information on shareware software, where to get it, and what's worth getting. Many

of the chapters deal with various categories of software available, word processors, communications programs and utilities, file utilities, hard disk maintenance programs, DOS shells, compression programs, database programs, programming utilities, games, business and finance software, etc. with a pretty thorough overview of what's available in each genre. It discusses the features to look for and avoid when evaluating shareware programs for your own use, and it provides good descriptions of the most popular titles in each category.

But the book goes considerably beyond that. It provides a reasonably accurate history of the development of the shareware concept, how and why it came into being, and how it developed. Many recognize Jim Button and Andrew Fleugelman as the earliest of the shareware developers. But did you know Bob Wallace, author of PC-Write, actually first coined the term shareware?

More than just a history, Dr. File Finder provides some very in-depth interviews with shareware authors to find out why they do what they do and how it has worked for them. Conversations with Barry Simon and Rick Wilson, author of several utilities including CTRLALT and STACKEY; Mark Herring, originator of Qmail; John Friel, author of Qmodem; and Sammy Mitchell, author of QEdit, provide some fascinating insight for those who are contemplating a career as shareware author.

The good Doctor goes beyond describing what shareware is and what titles he likes. He also provides a pretty good blow-by-blow in how to get it, covering PC user groups, disk vendors, commercial online libraries and BBS's with a pretty thorough introduction to using a modem, file transfer protocols, and connecting to the more popular services. Everything is approached from the minimalist point of view - what's quickest, what's easiest, and what's cheapest.

Like any good book, we can pick it apart in places. The BBS list is a bit long of tooth and includes only Wildcat and PCBoard systems. Limiting it to two software types needlessly antagonizes thousands of BBS run using other software including RBBS, QuickBBS, TBBS, Opus, Galacticomm, and others. The lists were obviously picked off the vendor boards and stuck in the book. His own more limited list of favorite systems, while smaller, was much more valuable. Since he's personally dialed thousands of systems, we would have probably found his own dialing directories valuable had he just dumped them into the book.

We didn't particularly agree with his history of the archive utility wars. Most of the conversion to PKZIP was an economic move driven by the fact that system operators across the country could regain twenty or thirty megabytes of hard disk real estate by converting to a more efficient utility. For most operators and users, the political implications were underwhelmed by raging apathy. Further, he claims ARC was the first of the modern file compression utilities. We're not sure what he means by "modern" but to our recollection ARC wasn't it. It was probably one of the most important, but not the first.

Books often describe the hardware operating setup that tests and results were performed on. Filefinder's section on hardware used did not seem to serve the goal of describing the operating setup so much as to very strongly tout particular vendor's hardware - in any event not particularly germane to the subject of shareware.

The book includes a disk containing some shareware titles. Notable among them, the Blackbeard editor, dCOM directory commander, and the IFF batch file enhancer. The cover in the first printing loudly proclaims that it comes with Qmodem and several other programs on the included disk. Due to a last minute production decision, the planned three disks were reduced to one, and several chapters shortened in the final version for space. As a result, Qmodem and a number of other utilities do NOT physically accompany the book. This is a bit misleading. You DO get Qmodem for the price of the book. Simply fill out a supplied card in the back of the book and send it in to PC-SIG to receive the "included" software at no charge - a relatively limp patch solution.

But while we can pick out some inaccuracies and foibles, they are countered by the remarkable sense of history and detail - why WordStar commands still linger in editors, the battle between disk vendors and shareware authors, the relationship between shareware and BBS systems, and more. Most readers will find value in the technical tips and in finding out about obscure but superbly useful programs they may not have heard about elsewhere. The little "Doctor's Notes" sprinkled liberally through the tome are quite useful. And of course, there are a remarkable number of names, addresses, telephone numbers, etc. that serve as a resource.

The shareware world, as fascinating as it is, can be overwhelming in complexity and volume simply because it is so rich in available titles. You can quite easily download a dozen programs that don't quite live up to file descriptions before finding the next beauty for your hard disk collection. Dr. File Finder has invested the past eight years in separating the wheat from the chaff. Overall, this book distills thousands of hours of the Doctor's online search for the crown jewels of shareware into one usable guide.

But beyond both its usefulness and its inaccuracies, there is something about this book, this man, and the obvious love he has for an industry in the birthing, that puts this title in our personal collection as more of a work of art - perhaps a historical romance - than a computer book. We're most profoundly pleased to carry his regular column in the pages of Boardwatch. Dr File Finder's Guide to Shareware by Mike Callahan and

Nick Anis. 1019p. **$39.95**. Dvorak Osborne McGraw-Hill, 2600 Tenth Street, Berkeley, CA 94710;

UNLIMITED ACCESS

PRODIGY - GENIE EXPERIMENT WITH CHANGE

Prodigy Services Company has been gaining a bit of attention recently with some fairly dramatic changes to their service. The most positive among them is a new software package for accessing the service. The package makes the service faster in operation than previous versions and perhaps a bit prettier.

Prodigy has made significant inroads in the home videotext market by providing local dial-up service at a flat rate of **$9.95** per month. Although the service does not allow the conventionally expected functions of software upload/download, online chat, and the ability to log information to disk and printer, it has gained some following for the online stock quotes, games, and educational resources provided online. The service makes most of its income from acting as an online mall. The service makes approximately **10%** on all online sales.

The company had also recently announced an alliance with BT Tymnet to allow over 300 communities local access to the service. Tymnet is a packet switching service that typically charges an hourly rate for connections between U.S. cities. The question of the hour seems to be: How can Prodigy retain their **$9.95** monthly fee for unlimited service while still carrying 300 cities on a clocked network such as Tymnet. The answer would appear to be, at least partially, that they can't. The service has announced a **30%** rate increase effective January 1 to **$12.95** per month. They are currently blanketing the country with direct mail pieces introducing the service at **$12.95** with no mention of the previous rate.

Perhaps more controversial than the rate increase is their first move toward a'la carte pricing. Their current direct mail piece not only makes no mention of a new E-Mail charge, but actually touts the service as having no other charges beyond the **$12.95** per month. But online reality is a bit different. The company has introduced a **$0.25** per message surcharge on all E-Mail beyond a **30** message monthly base usage. This has created such a storm of controversy on the service that the wizard is having a bit of difficulty hiding behind the curtain. Current users are apparently furious at the change. Many users send several messages daily and would quickly use up the **30** message allotment. It's not clear whether it's 30 messages per account or per person. The company claims some users were "abusing" the free mail service by sending as many as **1200** messages per month. They're sending plenty of messages now - almost all of it furiously negative over the change.

Another factor causes some confusion. The company recently announced it had topped **500,000** users. A closer look, however, reveals a probable total of about **250,000** or less actual accounts and less than that actually paying a bill. The company steadfastly refuses audit and counts all subscriber family members (up to six per account) as "users". By contrast, GEnie claims **209,000** users and CompuServe is currently claiming nearly **600,000** users. These counts are based on access accounts. They make no claims to how many family members may be using the same account. Still, Prodigy has to be considered one of the fastest growing services in the country.

All is not well with Prodigy in other ways. The company recently dropped their toll-free help line. And several rumors are making the rounds regarding Sears Roe-

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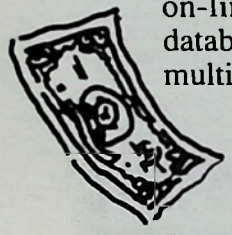

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CASE STUDY #2

Gary Clarkson: The Talk Channel

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To see what Gary has done with his system, use your modem to call: 818/506-0620, (8/1/N).

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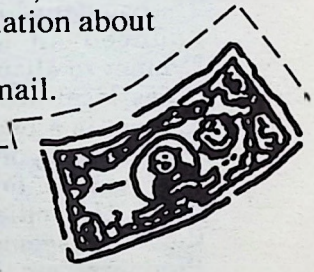

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buck and Company's dissatisfaction with the service. Sears has been pressuring the service to turn a profit. Apparently, they are even looking to bail out of the partnership and some reports indicate they have discussed selling their interest to British Telecommunications plc, operator of Dialcom. In any event, the Sears catalog, which had been exclusive to Prodigy, is now appearing on both CompuServe and GEnie as well.

Meanwhile, GEnie has introduced some dramatic cuts in their pricing. As announced earlier, GEnie introduced a new **$4.95** flat-rate monthly fee. Actually, they've also dropped their **$29.95** sign up fee entirely. At this point, you can sign up for the service simply by paying the first month's **$4.95**. The skeptical will immediately question the move since not all services are available under the flat rate. However, a careful analysis reveals that by far the majority of the actual services are indeed included under the plan. You can dial the service, check and send E-Mail, access virtually all news functions, most of the roundtable discussions, check closing stock quotes, view most of the educational resource elements, and of course all of the online purchase (mall) items under the program. In essence, anything you can do on Prodigy, you can do on GEnie as well but at less than half the cost. The items not falling under the flat rate plan tend to be those unavailable on Prodigy at any price - software uploads/downloads, online chat, multiplayer real-time games, and a handful of special database services that were surcharged before anyway. Even the online connect time for software/chat/multiplayer games has dropped dramatically for the vast majority of 2400 bps users. The hourly rate for 2400 bps use was cut from **$10** down to **$6** per hour. While Prodigy is raising their prices by **30%**, GEnie is cutting theirs by **40%**. Is this some industry or what?

One of the reasons GEnie can do this is that they own their own packet network - available as a local call from over 500 US cities. Another element to consider: CompuServe claims nearly 600,000 users and GEnie claims over 200,000. One problem with THEIR numbers is that many individuals, due to various free-time promotions, have several accounts on the system. Once the free time is consumed, they rarely use the extra accounts. Further, many individuals don't use their accounts at all - perhaps logging on for a few minutes once every two or three months. When CompuServe bought the SOURCE service in 1989, the main thing they actually got was a list of 55,000 users accustomed to receiving a **$10** monthly charge whether they dialed in or not. CompuServe liked this so much they shortly after instituted a **$1.50** monthly charge of their own. This works like magic to raise revenues from dormant accounts. All these services are automatically charged to credit cards anyway. A **$1.50** per month charge is not enough to scream about if you do use the service occasionally and most will either knowingly or not go along with the program. If **200,000** accounts aren't used that month, there is still **$300,000** coming in to help track their dormant accounts.

At **$4.95** monthly, GEnie quite likely will garner enough money from dormants to cover the actual costs of the flat-rate users quite nicely. In effect, they have dramatically lowered the costs for those that actively use their service by significantly increasing the costs for those who don't actively use it. This is cunning in a very pleasant win/win fashion.

Although GEnie does present a rather plain interface, it has grown well in the past few years based on a low access price coupled with a competitive array of services. Their ALLADIN access program is not the best in the business but does offer some enhancement. But at **$4.95** per month and **$6.00** hourly for clock intensive services such as chat and downloads, GEnie begins to look competitive even to local BBS services in price while offering national scope and access. And it puts Prodigy and CompuServe to bed by offering a combination of the strong points of each service (Prodigy's flat rate and CompuServe's software downloads /chat) at a price dramatically lower than either other service. Our read of comments on BBS across the country is that the real online aficionados are genuinely impressed with GEnie's new efforts. The move seems to be the subject of a large number of online conversations these days and they seem to have garnered a great deal of favorable attention by the move.

GENie is making some other attractive motions toward success. The commercial E-Mail component of their network, GEIS-COM, is adding **9600 bps V.32** connections in 40 cities, including Denver. Availability for GEnie users can't be far behind. They are aggressively pursuing international connections. Japan's PC-VAN network is now directly accessible by GEnie callers - albeit at a surcharge - and this month they've extended connections into East Germany and added a German roundtable to their repertoire. The East Berlin connection allows callers there to tap into GEnie via a local call. The company plans ports in Dresden, Leipzig, and Chemnitz before the end of the year. Clearly, the trend in commercial services is toward better service at less expense. And GEnie in particular seems to be aggressively seeking a dominant marketing position. If they should for some reason decide to implement a somewhat standard graphics interface that the rest of the world could share in (might we suggest NAPLPS?), they very likely could wind up being the dominant service within a short period of time. GE Information Services, 401 N. Washington St., Rockville, MD 20850; **(800)638-9636.**

WHOLE EARTH LECTRONIC LINK OFFERS FREE TIME FOR NEW SUBSCRIBERS

One of the elements of an online service most critical to success is to foster a feeling of community - belonging to a group - among callers. Few do it well and some of the

major players seem oblivious to its importance. One group that has mastered this concept better than any other is The Whole Earth Lectronic Link (WELL) operating in Sausalito California.

The WELL user interface is not technically impressive. It runs on an eight processor SEQUENT mini under Unix and it is classic Unix. No pretty menus, delightful databases, or attractive advertisements for rug shampooers. It is hard core plain vanilla Unix message conferencing. They've run a system titled PicoSpan for years that is showing its age a bit. They have made noises about changing to another equally obscure system but they haven't actually made the switch at this point. And once the interface is mastered, the presentation of groups, topics, and streams of messages and responses do comprise a surprisingly effective communications paradigm. Conversations are relatively easy to follow.

What the service does have is a sense of community. Callers are neighbors in a virtual community often referred to as cyberspace. There is a bit of an off mainstream underground cult feel to the place that carries enormous charm. It's difficult to describe, and in fact, difficult to detect on the first few calls if you are distracted by learning the arcane syntax of Unix/PicoSpan. But if you continue on the service, you will begin to be drawn into the main activity, message conference discussions on a broad array of topics.

Most systems claim to have message conferences on various topics. But the heart and soul of message conferencing is really the heart and soul of those writing the messages. Discussion among a good group of able minds on topics of concern can be enormously rewarding. On the other hand, childish diatribes from awkwardly aging adolescents are notably less so. The WELL has succeeded above and beyond all other online services in attracting the best and the brightest to their online shores. The level of discussion is dramatically a cut above most you will observe online.

The Telecommunications message area is interesting. Callers can not only read and reply to serial stream of messages on a topic, but actually branch off and begin a new topic. Topics can also be searched for various content keywords. We found some interesting conversation on Usenet from a Laptop, Flat-Rate Packet, Video Telephones, Dvorak's book on telecommunications, etc.

In the Technical Writer's group (tec), we found some very informative discussion of freelancing practices, rates, and techniques for finding work. There were also conferences on the One Person Business, Periodical/Newsletter production, Laptop Computers, and a Writer's Workshop.

The service actually caught our attention a few years ago when they upgraded their hardware. Unix, more of a religion than an operating system, is widely proclaimed by proponents as the ultimate multiuser system. In truth, while it does offer a very flexible and powerful environment, it is not actually very efficient when it comes right down to answering the telephone. The WELL had attracted a following and was enjoying some pretty dramatic call numbers. The VAX 750 it ran on could barely hold water with twelve lines loaded. The service needed to expand.

They decided to purchase a much faster, multiprocessor Sequent mini machine. The problem was, after digging all the dimes out of the office couches and raiding the soda machine, they still didn't quite have enough in the till to pull it off. So the management went on the system and quite frankly explained the situation. They asked anyone who felt they could do so to pay a few months of the monthly membership in advance or contribute whatever possible toward the upgrade.

The "community" rather immediately and with little fanfare voluntarily coughed up **$25,000**. In a world where grousing about money has usurped grousing about weather as a pastime, we found the success of this "public television-style" emergency fund raising almost touching - and certainly unusual. If nothing else, it bears testimony to the high esteem users of this system hold for it.

The list of luminaries that frequent the WELL would be tiresome to tally by name. Virtually anyone who has played a role in the PC industry from its infancy has been on the system at one time or another. Some of the top technical minds in the country are on regularly. It really does have a cult flavor, hardly dampened by the fact that The Grateful Dead rock group adopted it as an online home for many years. The Electronic Frontier Foundation we've written about in recent issues was essentially birthed there. John Perry Barlow, who joined with Mitch Kapor of ON Technologies to start EFF, was among other things a lyricist for The Greatful Dead. Essentially, if you grok the culture of The Whole Earth Catalog, the quarterly Whole Earth Review, and probably the early days of Rolling Stone, you're home here. Journalists from the New York Times, Newsday, etc. absolutely prowl the place trolling for stories or just letting their hair down online.

The result is a daily convention of some of the brightest and most creative minds online. Despite the daunting interface, complete novices quickly learn the vagaries of the system with the assistance of a very helpful group of people. In fact, many of the WELL's most ardent advocates have little in the way of technical background.

But we do digress. The reason for this story is that the WELL is running a special offer for new callers. You get five hours of free online time and a free 129-page user guide by calling the system. Dial **(415)332-7190**. At the **Login:** prompt enter **bbsuser**. Note that on-screen instructions ask you to

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PRESENTS

The all new **Message Manager** for TDBS systems. This program is the creation of Ben Cunningham, a pioneer in writing quality programs for The Data Base System (TDBS). Some of the highlights of this package are: Support for up to 10,000 message areas; SysOp configurable full screen editor; SysOp configurable reply quoting; the capability of editing messages after they are saved; the ability to perform any kind of maintenance while the BBS is on-line; the ability to import and export text while the BBS is on-line; users can change several read options at any time and save them to disk to make the changes permanent; users can subscribe to up to 60 areas and see all the new messages in each area when they enter the message menu; message areas can be made to be anonymous (user name not in message headers); message areas can be configured to be auto-addressing (i.e. all original messages are sent to a specified name); complex and/or search capability on any combination of FROM, TO or SUBJECT fields; message text can be searched for strings; FidoNet format message import and export utilities are now being developed, etc. This program will be priced starting at $179.00.

The extremely popular game of **StarQuest**. This is the first multi-player, multi-user space game to run under TBBS/TDBS. You can create a universe of a size that is best for your system and its users and your users create and capture settlements and become active wheeler/dealers across your universe. Their settlements can be attacked and captured whether the user being attacked is on-line or off, and as the users gain in strength and worth the computer controlled pirates and the tax assessor will be there to lend a helping hand. This on-line multi user game has already proven itself to be popular with the users and it's not only a lot of enjoyment for them but it can quickly pay for itself on systems charging for access. This program is priced at $149.95.

The powerful and productive **On-Line Sales Manager**. This on-line catalog sales program is written by Jeff Johnson, another pioneer in TDBS software, and it easily shows the power and capabilities of TBBS and TDBS. The Sales Manager will display a catalog of items for sale under categories you specify, each item can have a full descriptive text file attached to it and the user can place an order at any time and continue to browse through the catalog. When done the user selects to order and is presented with each item and given the opportunity to indicate how many are to be shipped. Once all items are ordered the software will check to see if the customer has an account, if not it will prompt for all necessary order information. Developed as a modular package this software will handle everything from a low level order entry system to a fully featured point-of-sale package that will print invoices, track inventory, track billing and do all the things you would expect of a full sales package. It really must be seen to be appreciated. This package starts at $395.00.

There's more available for the TBBS/TDBS SysOp, as well as for anyone interested in an Information System (BBS). If you want to learn more about TBBS/TDBS just call our system and carefully browse through Our Demonstration and Sales Area and take the time to register as a customer. GW Associates offers full support to all SysOps and we have several excellent programmers available to help with your applications and customization. Please call our system at (508) 429-1784 (N,8,1) and keep up with our new releases or call us on our voice line at (508) 429-6227 if we can help you in any way. Installing commercial systems is our ONLY business, and we're very good at it!

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enter your user ID or **newuser**. To qualify for the five free hours, be sure to enter **bbsuser** instead.

Access to the system requires an **$8.00** monthly membership plus **$3.00** hourly connect charge which they like to handle via Master Card or Visa. Regular mail billing incurs a special one-time **$25** nuisance charge. In addition to their dial-up lines, the WELL is also available via the CompuServe packet-switched network at an additional hourly charge of **$5.00**. This is a bit cheaper than dialing direct, but the **$8.00** per hour total still begins to look a bit proud. Simply dial the local CompuServe access number. Instead of entering **CIS** for CompuServe at the **Host:** prompt, enter **WELL** instead. You can then logon normally.

To find your local CompuServe access number, dial **(800)848-8980** voice - or by modem, dial **(800)848-4480** and enter **NETWRK** at the **Host:** prompt. An excellent online help system assists you in finding CompuServe access numbers anywhere in the world. All CompuServe network connections should be made at **7** data bits, **E**ven parity, and **1** stop bit (**7E1**) rather than the **8N1** normally used for direct dial access to WELL or any BBS. Whole Earth Lectronic Link, 27 Gate Five Road, Sausalito, CA 94965; **(415)332-4335** voice.

LETTER TO BOARDWATCH

We don't normally print letters to the editor. We do occasionally get them. We just don't print them. Mr. Mark C. Nasstrom wrote recently with a very legitimate criticism regarding Boardwatch. We thought we'd print it along with the photograph Mr. Nasstrom sent showing himself looking out over the rocky shore of the Oregon coast.

Dear Editor,

Thanks alot for your lastest issue, as always, informative & humorous! As a SysOp of the Only BBS on the Oregon Coast, it keeps me informed and gives me some laughs besides, on the Real World of Big City BBSing!

In the Computer Circles I run in, its considered the Only Reputable Source on the BBS Community, be it Policy or Equipment. Thanks A Bunch!!

I would like to see a column or a review of Smaller BBS's (call it "Seat Of Your Pants BBS's" ha!) such as the one I support. Every time I read a review of yours about BBS's that have 10-45 lines, run on 386's or better, with Gigabyte File Storage, I damn near break out in a Cold Sweat! Our Little System is run on Commodore 128 with one dedicated line, & one Double Floppy Drive, purring along at 2400 baud! See why the Cold Sweats??? We offer 15 Message Bases, ranging from "Latin" to "For Sale". We Have no UL/DL Functions, scrapping that in favor of E-Mail Function between Users. It has something to do with disk space..this came as no surprise. We are truly a "community based" BBS, as our users are from 14-50 years old, and we charge NOTHING for access. Its really quite a challenge to run such a BBS here on the Coast, due to the heavy weather that blows in all winter, along with the usual power outages/surges that accompany such weather! I invite you to give us a call. CASTELLUM MAGI, THE OREGON COAST, 3/12/2400 24 Hrs **(503)265-3431**. Mark C. Nasstrom, Castellum Magi, P.O. Box 479, Yachats, OR 97498.

[*Guilty on all counts Mark. In the never ending fascination with larger disk drives, faster CPU's, more lines, better software, faster horses, younger women, and older whiskey, we sometimes forget that it's not nearly so important what BBS system you have your information on, as it is what information you have on your BBS. Thanks for the reality check. Don't run in circles - computer or otherwise. - Editor*]

THE ORIGINAL FIDO BBS

In our September issue we made a pale attempt at providing some of the history behind the development of the international FidoNet network - probably the largest net-

work of hobby bulletin board systems in the world with some 7600 systems in operation exchanging mail and files around the globe. It is perhaps interesting to revisit the birthplace of this international BBS phenomenon.

Tom Jennings originally developed a BBS program titled FIDO in 1984 in San Francisco California. He provided his software to John Madill who became in effect, the other "node" of the infant network. Soon hundreds, then thousands of systems across the nation and around the world setup FIDO systems and joined the network. Tom Jennings still runs a system in San Francisco using Version 12s+ (s an abreviation for ser or third) of FIDO software still available and distributed. The system operates at (415)863-2739 as 125/111 in the network.

Jennings has made his living over the past few years by selling FIDO software. As the market developed, any number of newer, flashier, and most importantly, multiline products were introduced. As a result, the pickings have grown progressively more lean. But there is still a small but faithful band of operators still running the original program in its latest version. A recent visit to the Fido Software BBS turned up several messages from corporate users seeking an upgrade to the latest version.

The philosophy extant in FidoNet six years later remains largely the legacy of Tom Jennings. Jennings saw a loose, decentralized volunteer organization operating more or less autonomously. The International FidoNet Association (IFNA) setup as a 503c non-profit corporation was envisioned as an entity aside to handle nodelist distribution, provide a forum for reimbursing expenses of some of the individuals doing the housekeeping, and providing certain outreach services. Others saw it as a more integral part of FidoNet itself and attempted to involve IFNA in selecting technical administrators such as Zone and Region Coordinators. The ensuing clash ultimately resulted in dissolution of IFNA at the August FidoNet convention held in New Jersey.

Jennings had licensed copyrights and trademark to the Fido name and the nodelist to IFNA. He canceled the license earlier this year and today retains copyright and trademark to Fido, FidoNet, the FidoNet Nodelist, and the FidoNews electronic newsletter. He continues to market Fido BBS software and do a bit of consulting in the San Francisco area. Fido Software, Box 77731, San Francisco, CA 94107; (415)861-7183 voice.

ALL THAT GLITTERS - TREASURE HUNTING IN THE COMPUTER GARDEN BBS

Milford P. Webster likes to find treasure. He's associate editor for Treasure Quest Magazine - The Journal of Lost Treasures, Shipwrecks, and Salvage. He's also a frequent contributor to Lost Treasure Magazine. He did the January/February 90 cover story on the salvage of the SS Central shipwreck.

Milford got his first metal detector in 1968 and he's been panning about across the ground in search of the mother lode ever since. In the interim, he's bought seven more detectors, paid for a couple of family vacations, and started his own computer retailing business from the gleanings of rings, coins, and jewelry he's located with the odd devices.

Today, he sells a line of 11 different metal detector models. According to Milford, the most popular is the $589 Tesoro model. Modern detectors can locate objects buried up to 12 inches deep under good soil conditions. While advances in depth haven't amounted to much, the discrimination characteristics of the more modern units are impressive and many come with visual LCD displays and notch filters to keep you from digging up every soda can tab in existence.

His BBS system operates on a single line at (301)546-1508 using Searchlight software. During the past few years, Milford has done pretty well selling a database of 2500 U.S. treasure-hunting locations. The database uses Jim Button's PC-File+ program. The ***Treasure Garden United States Treasure Database*** describes sites, and provides the name of the treasure, city, county, and state where it's located, estimated value, and a merit ranking of the probability of the existence of such a treasure. The database comes on six 5.25-inch diskettes and sells for $30.

The BBS features a message area containing 160 or so messages very nicely focused on the topic of hitting the lottery beneath the soil, or beneath the waves as the case may be. Additionally, there is a regular treasure trove of over a hundred text files describing treasures found, shipwrecks, interesting facts about gold and diamonds, and historical descriptions. We found a file detailing the world's oldest known shipwreck and another describing someone who found a cache of 8,000 ancient Roman coins. Many files described shipwrecks of such famous ships as the Edmund Fitzgerald, USS Hatteras, H.M.S. DeBrak, the Ward Liner Merida, and others.

The most interesting text file on the system is Milford's own article on the recovery of an estimated $400 million in gold from the recently located wreck of the SS Central America, which sank in a hurricane off the Carolina coast in 1857. We were enchanted by this tale of a ship that regularly carried passengers and gold bound from California to New York. The ship actually carried passengers for the Panama to New York leg of the journey and sank on its 42nd transit. The ship carried 102 crew, 476 gold-laden passengers, and three tons of gold on board. The article contains actual passenger accounts of the voyage, a terrible hurricane, and the drama and heroism of the rescue efforts that resulted in over a hundred survivors. Part two describes the technical elements of the current day salvage operation to recover one of the largest treasure finds in our his-

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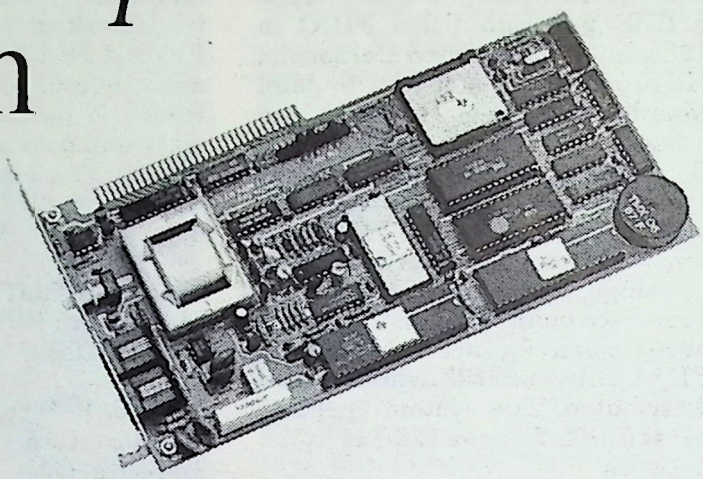

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SOFTWARE NOTES

COMPRESSION WARS CONTINUED - PAK VERSION 2.51

Most IBM compatible software programs actually consist of a number of files. The .EXE or .COM files are part of the actual program while a variety of help text files, configuration files, overlays, documentation files, etc. are actually required to allow the program to operate.

Very early in the online game, the difficulty of transmitting a program by telephone became apparent. Each file had to be "downloaded" separately. If you missed one, often the program wouldn't work. This gave rise to various "library" utilities used to combine all the files under one file name for transport. In this way, many files could be dealt with as one entity. Some of the old men of the online world will doubtless remember .LU files.

Another problem was cost. The 300 baud modems of the day took approximately forever to transmit these files by telephone. Additionally, long distance rates were half again more expensive than they are now. Anything that could be done to make the files smaller was directly convertible into cash. The initial efforts at PC file compression used a technique now referred to as Run Length Encoding. Basically, if you had a text file containing series of redundant characters, a series of 30 space characters for example, you could replace the 30 characters with three characters that simply contained which character was being replaced and how many of them there were. When the file was reconstructed, the three characters were replaced with the original 30. In this way, the files, in addition to being combined into a single entity, could be made smaller, and by extension, cheaper to transport by telephone.

The development of archive/compression utilities to address this need has become a cottage industry. The compression algorithms used are substantially more sophisticated today. Files can typically be compressed to half their original size and for many database, spreadsheet, and some text files, the result can be less than 10% of the original file size.

At one point, the most popular file compression utility was System Enhancement Associates ARC program. Files with the .ARC extension became an informal standard with several vendors producing utilities that created or retrieved .ARC files. After a legal imbroglio between System Enhancement Associates and PKWare Inc., creators of the competing PKARC utilities, PKWare established their own file format known as .ZIP. NoGate Consulting developed a similar utility that created .PAK files. And even the Japanese toed in with a program titled LHARC that created .LZH files. All work in broadly the same fashion. While these were the more popular titles, there were actually as many as 30 different archive utilities in use at one point. .ZOO is still rattling around the Unix world and in fact, Unix has it's own COMPRESS utility.

Many users resent the fact that where once we had a single predominant .ARC standard in the DOS world, they now face a confusing array of file extensions representing various compression utilities. But with each new release, the features become more plentiful and the compression ever tighter. It's a textbook example of technological innovation and competition at work. And it continues.

The latest entry is version 2.51 of PAK. And it does offer some relief. This latest upgrade offers some really significant advances. Most notably, it will create and retrieve, not only from its own .PAK format, but from .ZIP and .ARC files as well. Incredibly, it typically creates .ZIP files SMALLER in many cases than the actual ZIP program itself. And very likely, more reliably as well. There have been some recent, but continuing rumors about recurring CRC errors in .ZIP files. Most reports are not empirically reproduceable, but worrisome nonetheless. An associated utility, PKZIPFIX, may be able to recover the damaged files in some instances

We did a test compression of the PAK program, along with ARC Version 6.02 (shareware), ARC Version 7.0 (commercial), and PKZIP Version 1.10 (shareware). We compressed 197 short text files totaling 669,404 bytes with the following results:

TITLE	SIZE	SEC
PKZIP	333,308	58
ARC7	306,857	116
ARC	385,050	67
PAK	323,387	108
PAK -ZIP	326,306	114
PAK- ARC	388,382	72

As you can see, PAK created ZIPs 9K smaller than ZIP itself, although requiring nearly twice the time as ZIP. In ARC mode, it didn't fare so well. The results were a bit over 3K larger and some five seconds slower. ARC 7.0 still creates the smallest files at 306,857 bytes, and PAK does NOT emulate version 7.0 of ARC. However, ARC 7.0 is now a commercial program and is NOT available for download as a shareware product.

But for the first time in recent years, you can easily create archives in .PAK, shareware versions of .ARC, and .ZIP formats from a single utility. To do so, simply create the archive normally but with a /c switch for .ARC files, /z for .ZIP, and no switch to create native .PAK files - clearly the smallest of the shareware compression utilities. Further, PAK

has a conversion command you can use to automatically seek out and convert all files of one type to another, very easily and very reliably.

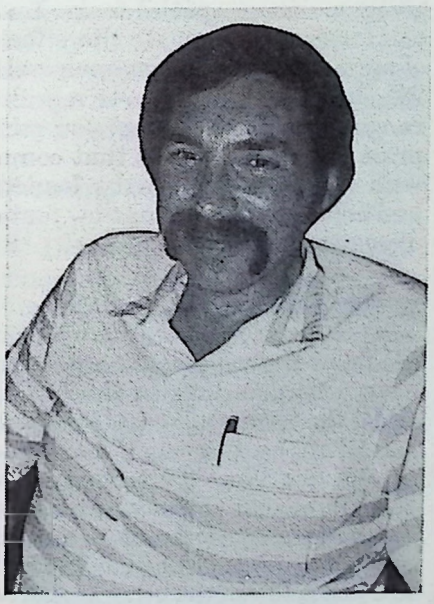
There were a couple of other things we liked about PAK. The program comes with an install program that creates a configuration file. The configuration file can be changed to make the commands operate differently. If you don't like **PAK A FILE.PAK /Z *.*** to create a zip file from all files in the current directory, you can change the command. For example, you can change the A function to ADD to be more descriptive if you like.

Another winning charm of PAK is the price. The shareware registration of PAK is a demurely modest **$15**. You can also register for the **PAKF** version. This is an attractive, snappy, windowed graphic interface to create and maintain archives. It isn't precisely shareware as it is not distributed freely. But for novices, it does provide a very usable interface. The commands are a bit odd in that you "copy" something into and out of an archive and "select" archives to work on. But it does provide a rudimentary DOS shell that can make maintenance easy for the beginner.

One of the most indecipherable things about such utilities is what you can and cannot do with them legally. PAK's legal theories are pretty clear and generous. Most utilities require a special license if you wish to use them to distribute YOUR software in compressed form. PAK deals with none of this nonsense. If you have registered a version of PAK, you can use it to create self extracting archives of your software with no further obligation. In fact, they go farther than that. They offer a **$75** Toolkit product that contains object files and programming examples you can use with your own **C** and Pascal programs to compress and decompress data using numerous techniques - including the ability to create **.ZIP** files. They do ask you not to use the functions included in the toolkit to create your own utility to generally deal with archive files as a competing product. But if you wish to use compression techniques to enhance other types of software, no royalties of any kind are required. Note that these are linkable **OBJ** object files, not source code.

PAK was originally developed in October 1988 by Mike Neuhaus and Gus Smedstad, who together form a small company titled **NoGate Consulting**. One of the things we like about this product is the authors are quite available and supportive. They operate a single line support BBS at **(616)455-5179** featuring a US Robotics Dual Standard 14,400 bps modem. The latest version of all the PAK products, including the windowed interface and toolkit, are available for download by registered users at all times. And they seemed quite keen on responding to questions and following up bug reports in their message area on the topic. NoGate Consulting, P.O. Box 88115, Grand Rapids, MI 49518; **(616)455-6270** voice; **(616)455-8491** fax.

DR. FILE FINDER



PC-DRAFT II AND PC DRAFT CAD: DRAWING SOME CONCLUSIONS

It's kind of funny the way things change. Not all that long ago when you talked about graphics you were talking about trying to draw a box with a BASIC program. If you really worked at it you could do some pretty fancy things with BASIC and graphics. Pretty fancy for the time anyway. By todays standards, that kind of graphics is more like a cave drawing. Today, when you talk about graphics, you might just as easily be talking about a scale model of the space shuttle drawn with exacting detail. For those of us who can't draw very well on our own, it helps to have a computer to step in and help us out. What happened that took us from just drawing boxes with BASIC to doing space shuttles? The biggest single factor is that the equipment that we have to display things with just got better. The **CGA (Color Graphics Adapter)** had certain limitations, especially when it came to resolution. EGA and VGA graphics adapters eliminated this problem and opened up new horizons in graphics. Since there is a lot of interest in graphics and drawing programs, this article is going to take a look at two programs by the same author that you might find of interest. Let's take a look.

PC-Draft II is an excellent Shareware drawing program that is produced by Michael Allen and Natural Software. You can use PC Draft II to handle drawing that you want to be more detailed. As it says in the manual, "PC Draft II is a high resolution pixel oriented drawing and graphing utility, which is designed to facilitate a variety of drawing and drafting needs." PC Draft II is certainly all of that and very well-done besides. It has a big brother, PC Draft CAD, which we'll look at in a moment, which can handle even more complex drafting assignments.

The program can be controlled with the keyboard or a mouse. You can draw boxes, lines, circles, ellipses, and much more. Use fonts for text, object libraries, and even create your own fonts. What else can PC Draft II do?

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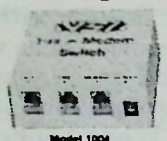
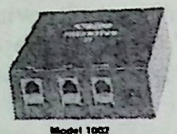
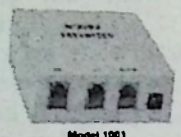


FMX connects FAX and Modem to same phone line. Automatically routes incoming calls to FAX or Modem. Requires no action by sender or receiver.



FSII shares any line with voice and FAX or Modem, and answering machine. Perfect for user who gets more voice than FAX calls. Fastest way for voice callers to get to you. Three transfer modes - automatic (CNG recognition), manual (DTMF (##/**) ring count (3-6).



FSI transfers incoming calls to FAX (or any device) after preset number of rings. Connect FAX to last line of multi-line group. Ignore incoming calls, let FS switch by counting rings (2-7).

VSI Telecommunications, Inc.
9329 Douglas Drive
Riverside, CA 92503-5618
800/999-8232, FAX 714/687-2513

VSI

The Features Of PC Draft II

This is a really flexible drawing program that can cover a wide range of needs. You can produce drawings up to 1280 by 700 dots and that's a lot of resolution using a color graphic adapter in a 640 X 200 dots per screen high resolution graphics mode. As noted, the program let's you do circles, arc, lines, create pie graphs, and the like. You can select from a number of patterns to fill in an area. Another nice feature is that you can save your work to a file and load it again at another time. You can also "cut and paste" so that if you get something just perfect in one area of a drawing you can automatically duplicate it in another area.

PC-Draft II provides you with a menu, but it can also be controlled by just keyboard commands. Once you become accustomed to it you may find it easier to just enter a command than to pick it off of a menu.

For getting some special effects with your drawings, PC Draft II gives you some special tools. You can for example, create the effect of animation or edit just one pixel. PC Draft II also supports a wide range of printers so that you can print your work. Fonts that come with the program can be loaded and edited and saved as new fonts of your own design.

Some Useful Extras

PC Draft II gives you the ability to save your drawings in the GEM, .IMG file format. These .IMG files can then be imported into programs like Word Perfect or Ventura Publisher. Files can also be stored in a compressed format to save space on your hard disk. Here are just a few of the other features offered by PC Draft II.

- Drawing grids are displayable at any spacing with optional "grid-lock"
- A pop-up status panel shows x and y cursor position, position of the screen window in respect to the full drawing area, the current pattern, the current cursor increment value, and more.
- An undo function repairs damage done by your last command.
- A preview function displays the entire drawing on the screen.
- Font, macro, and object libraries are included

Some excellent features that can assist you in creating some really nice drawings, but there's even more that PC Draft II can do.

A Script Language

PC Draft II has it's own script language that let's you do some amazing things. You can send numerous commands from a script that you've written and not have any cursor or menu interaction. This feature let's you animate the loading of screens, adding text, drawing forms, and graphing. A utility program included in the package lets' you capture screen images from other programs. You can then load these into PC Draft II and modify them to suit your needs. This ability to capture and edit gives you many more possibilities. If you can't find exactly what you want you may be able to find something close and then capture and edit it. Very slick.

Looking Over PC Draft II

PC Draft II is a program well-done and carefully conceived. Like all programs offering this kind of complexity, it may take some time to familiarize yourself with all of it's many features. It will, however, be time well spent because you'll be very pleased with the results. Even a novice can have a lot of fun creating pictures, generating fonts, and getting to know the program. One of the better Shareware draw-

ing programs, PC Draft II offers a lot of functionality for really good price.

PC Draft CAD

The big brother of PC Draft II is PC Draft CAD. It offers many of the features found in the other program plus a large number of extra functions. CAD stands for "Computer Aided Drafting" (some also call it Computer Aided Drawing) and PC Draft CAD certainly aids you in all the right ways. This program is different from PC Draft II in that is was designed to specifically help out with more complex drawing and drafting.

As the author says, " In contrast to PC-Draft II (our bitmap-pixel-based "painting" program), PC-Draft-CAD is a full fledged "draw" program. It stores your drawing as a database of basic drawing elements such as points and lines." So, PC Draft CAD might just be for you if you want to get down to some serious drafting.

Features Of PC Draft CAD

As noted, PC Draft CAD has some of the functions of PC Draft II, but it also has some others that help it to accomplish it's task as a full-fledged drawing program. The files are stored as a database and you can edit them as you wish. PC Draft CAD will automatically show you dimensions. Say you are drawing your dream house and you want a wall to be nine feet long. PC Draft CAD will show you when you've drawn a scaled line that is 9 feet. This means that you can create drawings that are very realistic and accurate. Dimensions can also be given in metric numbers. You can print your drawings on a variety of printers and plotters. Some of those supported by the program include the HP (Hewlett-Packard) Deskjet, any printers compatible with IBM and Epson dot matrix, and the HP Laser-Jet Plus. PC Draft CAD can also be used on plotters that support the HPGL plotter language.

Note that there are objects already defined to represent the bathtub, the sink, and so on, which was lucky for me because drawing in not my forte. With PC Draft CAD, however, you can do some great things even if you aren't Frank Lloyd Wright.

Checking Out PC Draft CAD

PC Draft CAD is extremely well-done and quite easy to use. It automatically detects what kind of display adapter you have and behaves accordingly. The most recent release has some nice new features that make the program even better and more flexible. Some of these include:

- Support for VGA (640x480), EGA (640x350) & super VGA (800x600) 16 color modes AND support for Hercules (720x350).

- Colors are used to indicate the current element, object, and layer.

- Virtual memory: drawing size can be larger than conventional memory would allow, up to a theoretical maximum of 32 megabytes. The new virtual memory code uses your Extended or Expanded memory and/or pages to disk if necessary. - Improved Font file structure results in 90% memory savings.

- Text elements can now be rotated at any angle, independent of the rotation of the current object.

- New options allow you to skip Text and/or Fill patterns during screen regeneration.

- Improved interface between the printer drivers and the main program result in faster printing and additional memory savings.

- Enhancements to the Double Line command make it easier to use for architectural plans.

- - The previous drawing command can be repeated by pressing the right mouse button or the Enter key.

- Deleted drawing elements can be restored with the new restore command.

That's quite a list of features in itself and that's just the improvements! If you want to get into some really detailed drawing, look for PC Draft CAD. It can do many of the things that the high-priced commercial programs can do, but without the high price. A nice job of programming.

Author: Michael Allen
Company: Natural Software
Address: 19 South Fifth Street
St. Charles, IL. 60174
Phone Orders: (708)377-7320 -
Visa or MasterCard only
CompuServe ID: 70047,744

Registration PC Draft II Version 2.06: **$50.00** Registration brings similar benefits as those listed of PC Draft CAD. Registration PC Draft CAD Version 3.03: **$65.00** Registration includes the latest version, all utility programs, telephone support, the latest font, macro, and object libraries, a typeset manual, notification of new versions and/or libraries.

Boardwatch Online Information Service subscribers can download PC Draft II Version 2.06 and PC Draft CAD Version 3.03 by dialing **(303)973-4222**. These files are widely available on many other BBS systems around the country as well.

LOCAL AREA BBS LISTS - CHICAGOLAND

This month, we are going to try to introduce something new in Boardwatch Magazine - always a frightening prospect. Unlike our slicker-format brethren, we regularly try things in Boardwatch that just don't work. It's not that we intend for them not to work. It's just a genetic propensity for nosing out unworkable things and insisting on doing them anyway just to make sure. But this we have to try.

The online world of electronic bulletin boards is a bit larger than we portray in Boardwatch. This is not an intentional deception on our part. It's just that the task is a bit larger than our tools. We know with some degree of assuredness that there are about **14,000** publicly available bulletin boards operating in the United States and a bit over **20,000** world wide. If we attempted full coverage, our national list would run about **280** pages. A world wide list would cover about **400** pages. There is no way we could print this economically, no way to deliver it economically, and frankly, just maintaining the database is more than we could do properly.

Still, we routinely receive calls from novice readers who browse our little national list of select systems, and call to ask how we know we didn't miss any. We generally allow as how we could have missed a couple here or there but we'll pick em up next issue.

Yet for both the bulletin board systems and the callers, timely, accurate listings of all available BBS systems is a desirable thing. The question we've wrestled with is, is it a doable thing. We think so. But we need some help.

Essentially, it's time to let the cat out of the bag on this one. Boardwatch is not the first, last, or final word on BBS systems. Over the course of the past few years, we've found a small number of dedicated individuals and local system operators who put in an unbelievable amount of effort compiling local lists for their cities with very little in the way of appreciation or recognition for their efforts. Some lists are rather loosely thrown together. Others are very conscientiously verified by these people at their own expense and effort. None are as easy to put together as you might think. That's not a guess on our part. We've done it. And these lists don't just happen.

Virtually every city has some form of list available for download from local BBS systems. The problem for the new caller of course is getting the initial numbers of the systems that have the numbers. The best opportunity for maintaining a list of BBS remains at the local level and that is where it should remain.

What we propose is a rather loose alliance of such list keepers to be known as the Boardwatch National BBS List Exchange. For those forever trying to shorten the language to nonsense, how about Boardwatch BBS-LEX. For those who not only can't remember five consecutive words but also are confused about capitalization, BoArDwAtCh BbS-lEx. That should be enough to make anyone bbsyslexic. Vendors take note, we can play this silly game too.

This will itself be a list of bulletin board systems in various cities across the country where new callers can freely obtain a list of local bulletin boards and where system operators can call to register their systems. We'll publish a standing list within the pages of Boardwatch each month. In this way, Boardwatch readers who are not finding enough coverage of local BBS systems in their area to be truly useful, will at least find the number of the local BBS system that maintains a list of systems in their area. This won't be an occasional mention. We intend to maintain a standing list of systems and the area codes they cover for publication in each issue much as we do now with our standing national select list.

Additionally, we are establishing a central clearing house for such lists where participating keepers of lists can exchange lists with other areas. Mr. Gary Funk, operator of Data Point BBS in Fayetteville Arkansas has been named technical director of the project.

We're tasking him with developing a common data format and selecting systems from each area from those wishing to participate. A message and file area will be maintained on his system at **(501)442-8777** regarding the program for system operator/list compilers interested in participating. Mr. Funk may be reached by voice telephone at **(501)442-0800** and his mailing address is 1729 Cortland, Fayetteville, AR 72764. There is no fee for joining this select group, these guys have already paid enough in many many ways. We are looking for people who REGULARLY and conscientiously verify and maintain their lists. All individual lists received will be made available to all participating system operators. Eventually, we forsee compilations of the local lists into national lists that will likewise be made available and utility programs for list verification dialing, sysop registration, etc. The role of this central repository will be as an exchange and support function for those lonely individuals who dial through the night to gather and verify those numbers - along with a little well deserved recognition for their efforts.

Additionally, Boardwatch itself is going to continue making some changes. We would like to offer some coverage of individual cities with each issue. Starting with our November 1990 issue (you're looking at it), we'll be presenting somewhat detailed lists of a single city within each issue on a rotating basis. Naturally, our own Denver list will appear at least once each year, but we would like to feature a different city in each issue. This month, we're going to take a look at the Chicago area.

It is appropriate to begin with Chicago. This is where BBSing began with Ward Christensen (author of the XMODEM protocol) and Randy Seuss's CP/M BBS back in 1978 - still in operation at **(312)545-8086**. It is widely regarded as the first operational online service to operate from a personal computer and in fact, they coined the term Bulletin Board System because it was to serve as an electronic replacement for an actual bulletin board used at their local user group meetings.

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In the heart of our continent, Chicago is widely known as the Windy City. You would think this was because of the wind. According to Colby Jordan, sysop of Stillwaters BBS, it actually refers to the politicians in the area. But they also sport a pretty good technological base. The summer consumer electronics show is held there each year. Numerous high technology communications companies are located nearby including U.S. Robotics and Motorola.

BBSing is apparently a pretty popular pastime in the Chicago area. They feature over 500 BBS systems and one of the best maintained lists in the country. A group of about ten dedicated individuals headed by **Mr. Peter Anvin** publish the **Stillwaters Chicagoland BBS List** on a very regularly monthly basis. Mr. Anvin is a freshman at a college in Evanston Illinois and has been programming since the fourth grade.

The list is hosted on the **Stillwaters BBS**, a single line RBBS system operated by **Mr. Colby F. Jordan** more or less specifically to support list dissemination. The system operates at **(708)403-2826** with a high speed U.S. Robotics HST modem allowing a very quick download of the file - currently a bit over 16K in size. Mr. Colby Jordan, 14307 Clearview Court, Orland Park, IL 60462; (708)403-2824.

Our list is presented on five pages in this issue and of course relies heavily on the Stillwaters Chicagoland BBS List as source material. Our thanks to Mssrs. Colby and Anvin for permission to print. For reasons of space, we were forced to limit it somewhat. Over 100 Apple II and Commodore 64/128 systems are omitted leaving a still rather impressive 383 systems.

The statistical breakdown of the Chicago BBS world is a bit interesting. With regards to hardware, it will come as no surprise that IBM leads the pack with over **78%** of the systems running on an IBM or compatible. The Commodore Amiga systems, which we did include, beat out Macintosh for the second position.

CHICAGO BBS HARDWARE		
IBM	299	78.00%
Amiga	16	4.17%
Macintosh	14	3.65%
Atari	13	3.39%
CP/M	7	1.82%
Other	33	

With regards to BBS software, it was somewhat more evenly distributed. PC-Board was the clear leader with 81 systems opting for this system - over 21% of the total. Of the remaining, RBBS and Wildcat were not surprising but Teleguard and Spitfire made surprisingly strong showings. And it would appear that QuickBBS systems, suffering from the infighting over who owns the software, are badly on the wane. The alternative to QuickBBS, Remote Access, actually has two more systems than the original QuickBBS software.

CHICAGO BBS SOFTWARE		
PCBoard	81	21.15%
RBBS	34	8.88%
Wildcat	31	8.09%
Teleguard	31	8.09%
Spitfire	20	5.22%
TBBS	18	4.70%
Opus	13	3.39%
Searchlight	12	3.16%
Unix	9	2.35%
Remote Access	8	2.09%
Hermes	8	2.09%
QuickBBS	6	1.57%

Modem speeds reflected a couple of elements worth noting: a strong move toward the higher 9600 bps units and away from 1200 bps, and a convincing market dominance in 9600 bps units from U.S. Robotics. Strong throughout the BBS community nationwide, they virtually have the market locked up in their own backyard. Based in Skokie, Illinois, they seem to have Chicago persuaded with a total of over 95% of all 9600 bps and faster systems sporting the U.S. Robotics HST or U.S. Robotics HST Dual Standard models.

CHICAGO BBS MODEMS		
1200 bps	25	6.53%
2400 bps	213	55.61%
9600 bps	140	36.55%
undetermined	5	

Of 9600 bps modems		
USR HST 9600	101	72.14%
USR HST DS	33	23.57%
Hayes V-Series	4	2.86%
Other CCITT V.322		1.43%

BBS titles can be fascinating. Often, a title in a list is all available to draw callers and many sysops can be heroically creative in this area. While we were familiar with systems such as Aquila, Chicago Syslink, Ward and Randy's, and the Chicago Computer Society, we have to wonder what's behind the doors of the Busted Pumpkin Message Circus, Day of the Yuga, Distant Fingers, and the Ephemeral Hedgehog.

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BOARDWATCH MAGAZINE
CHICAGO AREA LIST OF ONLINE SERVICES

TITLE	TELEPHONE	HARDWARE	SOFTWARE	MODEM
1149	219-293-1149	IBM	PC-Board	US Robotics HST 9600
1984	708-849-0445	Amiga		US Robotics HST 9600
1Step	312-248-8758	IBM	RBBS-PC	2400
20/20	312-769-2020	IBM	TBBS	2400
7-11 Club	219-938-2777	IBM	Spitfire	2400
786 BBS of Chicago	312-973-6516	IBM	PC-Board	US Robotics HST 9600
A/V	312-906-0698	IBM	Wildcat	2400
ACES	219-875-3960	IBM	PC-Board	2400
ACUTE for Accountants	800-872-2883	IBM	PC-Board	2400
Advocate/Nowar/Amnet	312-939-4411	CP/M		2400
Affordable Software	708-259-0353	Amiga		US Robotics HST 9600
Alfers Secret Service	708-670-0212			2400
Alliance Center	708-831-1142	Macintosh		2400
Amalgamated Union	708-991-7112	IBM	Wildcat	2400
American Archive	312-276-4159	IBM	PC-Board	2400
Amiga Doc	708-351-8815	Amiga		US Robotics HST 9600
Animal House	708-697-4475	IBM	Teleguard	US Robotics HST 9600
Another Green World 115/654	708-634-8892	IBM	Remote Access	2400
Antelope	312-764-5162	CP/M		2400
APCU/CADBUG	708-848-2529	IBM	RBBS-PC	2400
Applied Computer Services	708-448-3881	IBM	PC-Board	Hayes V-series 9600
Aquarian	708-892-0399	Amiga	GBBS	1200 bps
Aquila	708-820-8344	IBM	PC-Board	2400
Arena, The	708-367-6885	IBM	PC-Board	2400
Arlington Library Dial Access	708-392-0188			1200 bps
Art of Luck 115/524	708-524-4741	IBM	Remote Access	2400
Arte' Graphics DTP	708-259-0215	IBM	Wildcat	2400
Bad Boys	708-599-7752	IBM	Teleguard	2400
BBS-Chicago 115/842	312-842-1745	Amiga		2400
Beacon	708-615-0845	IBM	RBBS-PC	2400
Bear's Den	815-337-5562	IBM	RBBS-PC	2400
BeeLine Super	219-874-2074	IBM	dBBS	2400
Beezodog's Place	708-668-8287	Macintosh	Red Ryder	2400
Bell Microcomputer Club	312-727-5043	IBM	PC-Board	US Robotics HST 9600
Beta Connection	219-293-6465	IBM	PC-Board	2400
Bill's Color Compatible	708-674-1638	IBM	PC-Board	US Robotics HST 9600
Bit Wiz 115/689	312-935-6809	IBM	Opus	USR DS HST/V.32 9600
Bits & Bytes	708-953-0396	IBM	Spitfire	USR DS HST/V.32 9600
Black Knight 115/740	708-740-2072	IBM	Opus	USR DS HST/V.32 9600
Blade Runner	219-769-4612	IBM	Spitfire	2400
Bloomingdale	708-307-8160	IBM	PC-Board	2400
Blue Moon	708-457-2219			2400
Blue Shamrock	708-771-7070	IBM	Spitfire	US Robotics HST 9600
Blue Thunder	708-289-1089	IBM		1200 bps
Board, The	708-757-3135	IBM	Forum-PC	2400
Bolingbrook Premium PCBoard	708-972-0628	IBM	PC-Board	2400
Bozo Board	708-948-5754	CP/M		US Robotics HST 9600
Brian's Den	708-371-8492	Amiga		US Robotics HST 9600
Broken Chip	708-587-4309	IBM	Teleguard	2400
Busted Pumpkin Message Circus	708-386-3988	CP/M		1200 bps
Bypass	708-318-7106	IBM	PC-Board	2400
Byte Bank	708-213-7566	IBM	Galacticom	2400
C.O.P.E. 115/777	708-790-0187	IBM	Opus	US Robotics HST 9600
Carol Stream Specialty	708-665-9876	IBM	PC-Board	2400
Castle of Desolation	708-885-8792	IBM	Wildcat	2400
CellBlock	708-455-9488	IBM	Teleguard	US Robotics HST 9600
Central Command	708-359-9346	IBM	Wildcat	US Robotics HST 9600
Channel 708	708-474-4280	IBM	Searchlight	US Robotics HST 9600
Chaos	708-668-5731	IBM	Teleguard	2400
CHART-Board, First	815-337-0279	IBM	TBBS	2400
Chi-Net	312-725-5890		Unix	2400
Chicago BBS 115/396	708-297-1591	IBM	Opus	USR DS HST/V.32 9600
Chicago Board of Trade	312-239-1889	IBM	PC-Board	US Robotics HST 9600
Chicago Computer Society	312-942-0706	IBM	RBBS-PC	2400
Chicago PC Jr User Group	708-894-9989	IBM	Opus	2400
Chicago Syslink	312-622-4442	IBM	TBBS	2400
Chicago TI-99/4a UG	708-862-0182	TI-99/4A		2400
Chicago Voice	708-982-0126	IBM	RBBS-PC	1200 bps
Chinet	312-283-8672		Unix	2400
Cicero Commuter	708-863-9599	IBM	Phoenix	2400
City Limits	708-966-2342	IBM	Spitfire	2400
City, The	708-299-3310	IBM	dBBS	2400
Clip Heaven	708-897-7432	IBM	PC-Board	US Robotics HST 9600
Clip-Joint	708-848-0922	IBM	Silver Bullet	US Robotics HST 9600
Clone Zone, The	815-886-2049	IBM	WWIV	2400
Coconut Club III	312-281-6887	IBM	TCOM	2400
Code One 115/789	708-789-3610			2400

BOARDWATCH MAGAZINE
CHICAGO AREA LIST OF ONLINE SERVICES

TITLE	TELEPHONE	HARDWARE	SOFTWARE	MODEM
College Campus	708-893-9428	IBM	New Image	1200 bps
Com-X	312-881-3799	IBM	RBBS-PC	1200 bps
Commlink	219-662-0986	IBM	Searchlight	2400
Compu-erotica	708-425-6061			2400
Computer Bay Online	815-455-2242	IBM	Spitfire	USR DS HST/V.32 9600
Computer Direct	708-382-3270	IBM	TBBS	2400
Computer Net	708-428-5726	IBM	Wildcat	US Robotics HST 9600
Computerized Investing	312-280-8764	IBM	RBBS-PC	2400
Computers for Christ #11	708-362-7875	IBM	TBBS	US Robotics HST 9600
Convolutions	312-583-7679	Macintosh	Hermes	2400
Cook County Board 115/743	312-743-4532	IBM	Quick BBS	US Robotics HST 9600
COPH-2 (BGMS) 115/778	312-286-0608	IBM	Opus	2400
Corporate Headquarters	815-886-3233	IBM		2400
Crown Point BBS	219-663-9177			2400
Cyclops	708-839-5002	IBM	TBBS	2400
Danger Zone	708-677-6320	IBM	Teleguard	US Robotics HST 9600
Darkside	312-283-0203	Amiga		US Robotics HST 9600
Datacom of Highland	219-923-2377	IBM	PC-Board	US Robotics HST 9600
Day of The Yuga 115/333	708-799-4790	IBM	TBBS	USR DS HST/V.32 9600
ddsw1	708-808-7303			2400
Defender	708-390-6603	IBM	PC-Board	2400
Defiant Sceptor	708-885-1237	IBM	PC-Board	2400
Den of Little Pleasures	219-489-2601	IBM	Quick BBS	2400
DePaul College of Law BBS	312-362-6217	IBM	Collie	2400
Distant Fingers	312-777-0240	Atari ST		2400
Do Drop Inn/Late-Nite	708-754-6567	IBM	PC-Board	US Robotics HST 9600
Doctor's Office, The	708-205-0438	Macintosh	Hermes	USR DS HST/V.32 9600
Dog House	708-830-8805	Amiga		US Robotics HST 9600
Dog House South, In The	708-323-4711	IBM	PC-Board	2400
Dragon's Egg II	708-695-8617			US Robotics HST 9600
Dragon's Lair	708-215-4937	IBM	Monarch	2400
Du Page Library System	708-232-7577			1200 bps
Dune Hi-Tech	219-762-5620			2400
DuPage Project Associates	708-964-0526	IBM	PC-Board	US Robotics HST 9600
E-Z Access	708-447-2259	IBM	Teleguard	2400
E.T.'s	219-674-6243			2400
Eclectic Dialectic	708-705-6774	IBM	Searchlight	US Robotics HST 9600
EIES Chicago Public Schools	312-890-8512			2400
Electropolis Multi-Line	708-213-1666	IBM	Galacticomm	1200 bps
Elgin Area Prof PC UG	708-888-7381	IBM	PC-Board	USR DS HST/V.32 9600
Elk Grove Repeater 115/529	708-529-1586	IBM	TBBS	USR DS HST/V.32 9600
Emergency Nurses Association	312-649-0490	IBM	TBBS	2400
Emporium	708-551-9275	IBM	Remote Access	2400
Ephemeral Hedgehog	708-293-1886	IBM	Teleguard	1200 bps
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Executive Region	312-267-4749	IBM	PC-Board	US Robotics HST 9600
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Far Heap	708-378-1109	IBM	RBBS-PC	2400
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File Depot, The	708-475-1954	IBM	Wildcat	US Robotics HST 9600
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GreyHaven	708-551-9461	IBM	Searchlight	US Robotics HST 9600
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Hotel Amiga	708-653-6089	Amiga	C-Net	US Robotics HST 9600
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MidWest	708-513-1034	IBM	PC-Board	US Robotics HST 9600
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CHICAGO AREA LIST OF ONLINE SERVICES

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BOARDWATCH MAGAZINE
CHICAGO AREA LIST OF ONLINE SERVICES

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Health	Technology	Insurance
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While the online information services industry is broadening daily, the number one topic of interest to most callers is still how to put their modem into play for maximum benefit. And since March 1987, Boardwatch Magazine has been the best way to do it. Now, we've introduced an Online Edition specifically for display on your information service. Boardwatch contains the full text of our printed magazine, along with our National List of Information Services containing over 150 product support systems, free government database services, and selected bulletin boards of note from all over the U.S and Canada. Boardwatch places the same information you now hold in your hands - the best information the online world has to offer each month - up on your callers screen. Get the definitive publication for the online world for your system. Boardwatch is available at a quarterly rate of $75 or an annual rate of $250.

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Terry McCraith's puts twelve years of experience as a professional book maker to work for your BBS system with Online Sparts Statistics. Incredibly detailed stats on professional and collegiate sporting events your callers can use to "beat the game". Updated twice weekly at $75 per quarter.

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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - NOVEMBER 1990

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
ADA Information Clearinghouse	(203)614-0215	Information on ADA Programming Language/Military Specs	Department of Defense	Washington ,D.C.
ANARC BBS	(913)345-1978	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	,KS
Applied Modeling Research RBBS	(919)541-1325	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Hurdle Mills ,NC
Aquila BBS	(708)820-8344	2 GB 9 Nodes Fidonet/Interlink/Metronet MCe IL/CHI	Kevin Behrens/Steve Williams/Chris Babb	Aurora ,IL
Ashton-Tate Technical Support	(213)324-2188	dBase and Multimate Support - CIS HOST NAME:ATBBS	Ashton-Tate Corporation	Torrance ,CA
AST Technical Services BBS	(714)727-4723	Superb support system for AST Computer Products	AST Research Inc.	Irvine ,CA
AT&T Support BBS	(201)769-6397	Support for PC 6300 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Plainfield ,NJ
Audiophile Network	(818)988-0452	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Van Nuys ,CA
Automobile Consumer Services	(513)624-0552	New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Cincinnati ,OH
BBS Press Service	(913)478-9239	Home of INFOMAT Online Weekly PC News Magazine	Alan Bechtold/BBS Press Service	Topeka ,KS
BellSouth's TUG Gateway	(404)594-3964	Transtext Universal Gateway - Atlanta Journal-Constitution	BellSouth	Atlanta ,GA
Best Friends BBS	(714)832-5902	DLX Multiline Chat/Match Social/Sexual	Ann and Joe Wiseman	Fountain Valley ,CA
Big Peach BBS	(404)446-6650	Home of Automenu and Treeview Software	Marshall Magee/Magee Enterprises	Norcross ,GA
Big Sky Telegraph	(406)683-7680	Education/Econ Development info to Montana rural Communities	Montanna Rural Education Network	Dillon ,MT
Bit Bucket Software BBS 104/501	(303)693-4317	Home of BinkleyTerm Mail Software	Bob Hartman	Aurora ,CO
BMUG BBS	(415)849-2684	Support for Macintosh owners - files - conferences.	Berkeley Macintosh Users Group	Berkeley ,CA
Book BBS	(215)657-6130	Information on 2000 Computer Books - 800 order number	Business & Computer Book Store	Willow Grove ,PA
Brown Bag Software BBS	(408)371-7654	Power Menu/ PC Outline Software Support	Brown Bag Software	Campbell ,CA
Bruce's Bar & Grill	(203)236-3761	24-line Social System - Chat - Games - Downloads	Bruce Lomasky	West Hartford ,CT
ButtonWare BBS	(206)454-2629	PC-File dB / PC-Calc / PC-Type Software Support	Jim Button/ButtonWare	Bellevue ,WA
C.A.R.L Library Service	(303)863-1350	Citations to 2 Million Texts in Colorado Library System FREE	Colorado Alliance of Research Libraries	Denver ,CO
Cape Cod Bungalow 101/870	(508)833-1794	Multiline Service - Shopping Mall - Games - Tourist Info	Crawford Communications/Daniel Crawford	Cape Cod ,MA
Castle Tabby 107/412	(201)988-0706	Home of TABBY Fidonet Interface Program for Apple Macintosh	Michael E. Connick	Bradley Beach ,NJ
CatHouse BBS 206/2901	(805)395-0650	Multiline Support System for Wildcat BBS Software	Mustang Software	Bakersfield ,CA
Census Bureau Office Automation	(301)763-4576	Microcomputers and Office Automation	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Census Bureau Personnel Division	(301)763-4574	Employment Opportunities Within the Census Bureau	US Dept. of Commerce/Nevins Frankel	Suitland ,MD
Channel 1	(617)354-8873	45-line PCBoard System - 3.7 GB Files - 250 Msg Conferences	Brian Miller/Tess Heder	Cambridge ,MA
Chicago SysLink	(312)622-4442	Special Interest Areas for Ferret/Pet Owners.TRS80/Aviation	George Matyaszek	Chicago ,IL
Classi Computer Fieds	(317)359-5199	Online System for Classified Advertisements	Steve Edsall/Trader Newspaper	Indiannapolis ,IN
Clean Air BBS	(408)298-4277	Environmental Health/Cigarette Smoking Topics	American Lung Association/ Sheila Blash	San Jose ,CA
Cleveland Freenet	(216)368-3888	Cleveland City Information/Ohio Governor's Office Online	Case Western University/AT&T/Ohio Bell	Cleveland ,OH
COCONET	(619)456-0815	COCONET Support/Demo - Hires Graphics BBS for Unix Systems	Brian and Patricia Dear	La Jolla ,CA
Computer Business Services	(714)396-0014	Computer Columnist John C. Dvorak's office BBS	John C. Dvorak and Nick Anis Jr.	Diamond Bar ,CA
Computer Garden	(301)546-1508	Treasure Hunting - Metal Detectors - Online Catalog	Milford P. Webster	Salisbury ,MD
Computerized Bulletin Board Sys	(708)849-1132	First Electronic Bulletin Board - Creator of XMODEM Protocol	Ward Christensen	Chicago ,IL
Computing Canada Online	(416)497-5263	Adjunct to Excellent Canadian PC Newspaper	Computing Canada Newspaper	Willowdale ,Ontario
Corporate Data Exchange (CDX)	(609)683-4422	PR Newswire/ Business Wire. Logon: hello user.cdx	LaFountain Research Corp/Tad LaFountain	Princeton ,NJ
Crosstalk Communications BBS	(404)740-8428	Product Support for Crosstalk for Windows/MK4/XVI	Digital Communications Associates	Roswell ,GA
CTC IEEE Employment Database	(508)263-3857	Online Database of 20,000 Resumes for Engineering	Career Technologies Corporation	Andover ,MA
Cul-de-Sac Bar & Grill	(508)429-1784	Multiline Service - Ham Radio - Humor - Echomail - Games	Pete White	Holliston ,MA
CyLink	(719)520-5000	Online Chat/Multiplayer Interactive Games - 12 lines	Klaus Dimmler	Colorado Springs ,CO
Dante Project BBS	(603)643-6310	Commentary/Research on Dante's Divinia Comedia	Dartmouth College	Hanover ,NH
Data Point	(501)442-8777	Online Publications - Excellent TBBS System	Gary Funk	Fayetteville ,AR
DataLink RBBS System	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA	Dallas Remote Imaging Group/Jeff Wallach	Carrollton ,TX

Dean's Office	(201)279-7048	Business and Education System - Small, but excellent
Depeche BBS	(702)674-2816	Online Text - Closing Stocks - USA Today - Sports Stats
East Bay X-Change 372/888	(803)556-7485	Home of XRS Offline Mail Reader
Economic Bulletin Board	(202)377-3870	Economic Statistics/GNP/CPI/Employment, Trade Opportunities
Eesti BBS #1	7 0142 422583	First BBS in USSR - Estonian Business Issues
Electic Dialectic BBS	(708)705-6774	40 Online Game Doors - Graphic Files
Energy Info Admin E-Publications	(202)586-8658	Variety of Petroleum/Coal/Electricity Energy Statistics
EXEC-PC	(414)789-4210	Largest BBS in US - 90 Lines - 70,000 files - 4 Gigabytes
Executive Network	(914)667-4567	Interlink Netmail National Host - Multiline PCBoard System
Farwest BBS	(604)381-3934	Large Western Canada Galacticomm Info System
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service
Federal Job Information Center	(313)226-4423	Federal Job Opportunity Lists available online
FEDLINK ALIX II	(202)707-9656	Info on Federal Libraries -Excerpts Library of Congress News
Fido Software BBS 1:125/111	(415)863-2739	The First Fido BBS and home of Fido BBS 12s
Fido Tech Stand	31-30-719994	Fidonet Technical Information for Holland
File Cabinet BBS	(215)678-9854	10-line PCBoard System. 959 MB-100 Conferences-80,000 files
FOG City BBS 125/10	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs
Forbin Project, The	(319)233-6157	Home of QModem SST Communications Software
Fred the Computer	(508)872-8461	Newspaper BBS. Wierdnet Newswire. List of MA Libraries
GLIB	(703)578-4542	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps
Greenpeace Environet	(415)512-9108	Ecological and Peace Issues - Disarmament/Toxics/Wildlife
GT PowerComm BBS	(713)772-2090	Home of GT Power Communications Software
Hay Locator	(317)494-6643	Database of Hay/Straw Suppliers and Buyers
Hayes Advanced Systems Support	(800)874-2937	Customer Support Line for Hayes Customers. V-series/Ultra
Herpnet/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish
HH Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty
HOLLIS	(617)495-9500	Harvard On-Line Library Information System - 7E1 VT100
Illuminati	(512)447-4449	GURPS Cyberpunk - Seized by SS during Operation Sun Devil
Imaging GraphicsLine BBS	(415)968-1834	Paradise/Verticom Graphics Products - .GIFs
Inbound/Outbound/Teleconnect	(212)989-4675	Telephone Sales Trade Magazine Online Service
Index Systems	(404)951-1540	Excellent list of Atlanta BBS systems online
Infinity World	(606)271-6556	8 line Galacticomm System - Many good text publications
Intel Support BBS	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286
Invention Factory	(212)431-1194	27 Lines - 100 Directories - Good Shareware Catalog
Investor's Online Data	(206)285-5359	Online Investment/Stock Market Information/Tech Analysis
JAG-NET	(202)325-0748	Navy Judge Advocate General's Information Network
JDR Microdevices BBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes
JOBBS	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.
Joe's Place BBS 1:367/15.6	(809)254-3566	Colorful Spitfire BBS in Puerto Rico
KIMBERELY BBS	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data
LANtastic BBS	(602)293-8065	Support for LANtastic local area network
Late Night Software 125/555	(415)695-0759	Home of UFGATE - Software to connect PCs to UUCP/Usenet
Leading Edge Auto info Line	(508)836-3967	Support for Leading Edge Computer Owners
LegalEase	(509)326-3238	Legal Issues/Forms - Law BBS List
LUMINA	(612)626-2206	Libraries of Univ.of Minnesota Integrated Net Access7E1VT100
Maxi-Micro TickerScreen	(212)809-1160	2000 Closing Stock Quotes/Market Research/Order Entry
McAfee Associates BBS	(408)988-4004	Computer Virus Information - VIRUSCAN and CLEANUP Programs
Micro Foundry, The	(415)598-0498	2.2 GB Downloads - Your Online Software Source - Boardwatch
Micro Message Service	(919)779-6674	SA Today/Boxoffice Magazine - Large Download Area
Dean Frank Relotto		Clifton ,NJ
Jerry Walters		Sparks ,NV
Mike Ratledge		McClellanville ,SC
US Department of Commerce		Springfield ,VA
Lembit Pirn/Estonian Business Assoc.		Tallinn ,Estonia
Bruce Johnson		Palatine ,IL
US Department of Energy		Washington ,D.C.
Bob Mahoney		Shorewood ,WI
Andy Keeves		Mt. Vernon ,NY
Ren L'Ecuyer		Victoria ,BC
Federal Communications Commission		Columbia ,MD
US Office of Personnel Management		Detroit ,MI
Federal Library Information Network		Washington ,D.C.
Tom Jennings		San Francisco ,CA
J.J. van der Maas		Utrecht ,Holland
Dan Bair		Wyomissing ,PA
Bill Essex		San Francisco ,CA
John Friel III		Cedar Falls ,IA
Middlesex News		Framingham ,MA
Community Educational Svcs. Foundation		Arlington ,VA
Dick Dillman/Greenpeace		,
Paul Meiners/P&M Software		Houston ,TX
Purdue Univ. Agricultural Computer Net		,.
Hayes Microcomputer Products		Norcross ,GA
Mark Miller		Philadelphia ,PA
Lee Winsor		New Hartford ,CT
Harvard University		Cambridge ,MA
Steve Jackson Games		Austin ,TX
Western Digital/Nan Coley		Milpitas ,CA
Harry Newton Publications		New York ,NY
Rodney Aiola		Marietta ,GA
Daniel Diachun		Lexington ,KY
Intel Corporation PCEO Division		Hillsborough ,OR
Mike Sussell		New York ,NY
Don Shepherdson		Bellevue ,WA
US. Dept. of Navy / Chris Buechler		Arlington ,VA
JDR Microdevices		San Jose ,CA
Alpha Systems Inc./Bill Griffin		Roswell ,GA
Jose Frias		Lajas ,PR
Federal Reserve Bank of Minneapolis		Minneapolis ,MN
Artisoft Inc.		Tucson ,AZ
Tim Pozar		San Francisco ,CA
Leading Edge Computer		Westborough ,MA
Bill Sorcinelli		Spokane ,WA
University of Minnesota		Twin Cities ,MN
Max Ule & Company		New York ,NY
John McAfee/CVIA		Santa Clara ,CA
Thomas Nelson/Clockwork Software		San Jose ,CA
Mike Stroud		Raleigh ,NC

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BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARD SYSTEMS AND ON-LINE INFORMATION SERVICES - NOVEMBER 1990

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
Microlink B	(303)972-9600	1 Gigabyte of IBM Software - Multiline - USA Today News	Girard Westerberg	Littleton ,CO
Microrim Technical Support BBS	(206)881-8119	Support for Popular R:Base Relational Data Base System	Microrim Corporation	Redmond ,WA
Microsoft Product Support BBS	(206)646-9145	Word/Works/Multiplan/Flight Simulator Application Notes	Microsoft Corp/Scott J. Honaker	Bellevue ,WA
Minnesota Spacenet	(612)920-5566	Minnesota Space Frontier Society - NASA News	Ben Husset	Minneapolis ,MN
Monu-CAD BBS	(607)264-3307	CAD Designs for Tombstones, Monuments, and Memorials	Jim Falivenc/Monumental Computer App.	Cherry Valley ,NY
MusicNet	(301)946-6796	CD Catalog, Music News, Music Files, Top 40 Listings	Mike James - Multimedia Software	Mount Airy ,MD
NARDAC BBS	(804)445-1627	Zenith Computer Support - List of Federal Micro User Groups	Navy Regional Data Automation Center	NAS Norfolk ,VA
NASA Headquarters Info Tech	(202)453-9008	Shareware and Technical Info for NASA PC users.	National Aeronautical and Space Admin.	Washington ,DC
NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Marshall Space Flight Center	Huntsville ,AL
Nashville Exchange	(615)383-0727	8 line TBBS - Games/TDBS Software Development	Ben Cunningham	Nashville ,TN
National Agricultural Library	(301)344-8510	Agricultural Info/Research Resources	US Department of Agriculture	Beltsville ,MD
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	National Genealogical Society	Arlington ,VA
National Inst.Science Technology	(301)948-5717	Micro Elect.Info Exchange - Virus Protection/Security Issues	National Inst. of Science and Technology	Gaithersburg ,MD
National Publishers Exchange	(813)989-1087	Headquarters for NPE Newsletter - Desktop Publishing	Ed Aborn	Tampa ,FL
Nautilus BBS	(316)365-7631	32 Line TBBS with 5 GB of Files on 80486. CD/WORMS	Nautilus Communications	Iola ,KS
NAVWESA	(202)433-6639	Naval Weapons Engineering Support	Dept. of Navy / Bill Walsh	Washinton, D.C. ,.
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Network World Magazine/CW Communications	Framingham ,MA
Neuropsychology Bound 157/3	(216)356-1431	Support Groups for Disabled/Physically Impaired	Butch Walker	Rocky River ,OH
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Boulder ,CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Boulder ,CO
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Laurel ,MD
Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Monrovia ,CA
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats -	US Department of Education	Washington ,D.C.
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Colorado Springs ,CO
Online Computer Bookstore	(408)744-0514	Online Database/Orders for Computer Book Titles	Austin Murphey & Associates Book Store	Sunnyvale ,CA
Online Now	(807)345-5522	5 CD-ROMS plus 3MB New Software per Week	Gary Walsh/Tom Haavisto	Thunder Bay ,Ontario
Online Sports	(716)688-6537	Large base of Sports Stats for Pro Gamblers	Terry McCraith	Williamsville ,NY
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Norcross ,GA
Oracle PC	6108 260-6222	South Australian TBBS Multiline System	Don Crago	Pooraka South Australi
Osprey's Nest	(301)989-9036	Birdwatching, Bird feeding, Naturalist/Ecology Issues	Fran and Norm Saunders	Colesville ,MD
PacComm BBS	(813)874-3078	Packet Radio Equipment Supplier - TNC/PSK Modems	Gwyn Reedy/PacCom Inc.	Tampa ,FL
PC Ohio	(216)381-3320	Shareware library with 100% USR HST access - 5 years up	Norm Henke	Cleveland ,OH
PC-Link Central	(812)855-7252	University PCBoard System. Home of A86/D86 Assembly Lang.	Indianna University/Eric Isaacson	Bloomington ,IN
PDSLO BBS	(516)938-6722	Home of THELIST - Listing of 3000 Nationwide BBS Systems	Jim Toro	Hicksville ,NY
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Univ.of Mass. Dept. of Physics/Astronomy	Amherst ,MA
Pinecliffe BBS 104/28	(303)642-7463	Large Shareware Library/Echomail Conferences since 1985	Craig Baker	Pinecliffe ,CO
PKWare BBS	(414)352-7176	Home of PKZIP 1.10 Compression Utility	Phil Katz/PKWare Incorporated	Glendale ,WI
Pleasure Dome	(804)490-5878	Sexually Explicit Fantasy Chat System - Adults only	Tom Terrific	Tidewater ,VA
Popular Mechanics Online BBS	(212)582-8369	Automotive, Home/Shop, Electronics/Photography, Science	Popular Mechanics Magazine	New York ,NY
ProComm Support BBS	(314)474-8477	Home of ProComm 2.4.3 and ProComm Plus Comm Prgrms	Thomas Smith/DataStorm Technologies Inc.	Columbia ,MO
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Indianapolis ,IN
Radio Electronics BBS	(516)293-2283	Radio Electronics Magazine Online Adjunct	Gernsback Publications	Farmingdale ,NY
Random Access Information Svc.	(503)761-8100	10500 IBM/MAC/AMIGA Files - 3000 MaxiPic Graphics	Janice Stevens	Portland ,OR

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RGB Computing	(519)824-3997	Multiline Information Service/PC Sales/Large File Selection.	Ronald Spencer - RGB Computing ..... Guelph ,Ontario
Rose Media	(416)733-2780	Excellent Canadian PC Board System-Publications/Conferences	Vic Kass ..... Willowdale ,Ontario
Rusty & Edies	(216)726-0737	Large ML PCBoard run by Husband and Wife - NFL/Tradewars	Rusty and Edwina Hardenburgh ..... Boardman ,OH
Salt Air BBS	(801)261-8976	Home of PCBoard BBS Software - National List of PCB Sys	Clark Development Company/David Terry .... Murray ,UT
Science Resource Studies BBS	(202)634-1764	Federal R&D Budget - Technical Labor Market Statistics	National Science Foundation ..... Washington ,D.C.
Scooters Scientific Exchange	(215)657-5586	Biotechnology/Chemistry/Physics/Astronomy/Space Sciences	Brian Moldover ..... Willow Grove ,PA
SEAboard!	(201)473-1991	Support system for ARC, SEADOG, and AXE software.	System Enhancement Associates ..... Wayne ,NJ
Seagate Technical Support BBS	(408)438-8771	Installation and Specifications for Hard Drive Models	Seagate/Shelley Toich ..... Scotts Valley ,CA
Sistema Profesional Informacion	525 590-5988	Largest BBS in Mexico - Spanish Language TBBS	Tecnologia Uno Cero S.A. de C.V. ..... Mexico City ,
Society for Technical Comm. BBS	(703)522-3299	STC Job Service, Freelance Registry - Technical Writers	Society for Technical Communication ..... Washington ,D.C.
Sonshine Express BBS	(408)946-7362	Family Oriented Christian BBS	Anton Johnson ..... Fremont ,CA
Sound Advice BBS	(816)436-4516	Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems	Roy Timberman ..... Gladstone ,MO
State and Local Emergency Mgmt.	(202)646-2887	Hazardous Materials/National Dam Watch/Emergency Info	Federal Emergency Management Agency .... Washington ,D.C.
Take 3 BBS	(602)482-1001	Reviews of Movies/Videos/ Film Industry Job Clearinghouse	Dave Kidder ..... Scottsdale ,AZ
Talk Channel	(818)506-0620	DLX-Based Multiline Chat/Talk Service - Sexual Orientation	Gary Clarkson ..... North Hollywood ,CA
TAXACOM	(716)896-7581	Botany, Herbaria, FLORA ONLINE Newsletter, Latin Translation	Clinton Herbarium, Buffalo Museum ..... Buffalo ,NY
Taxonomic Reference File	(215)972-6759	Online Bacterial Name Database - ORACLE Door	BIOSIS Carol Lock/Keith Pittman ..... Philadelphia ,PA
TBBS Net 104/23	(303)699-9248	Home of The Bread Board System (TBBS) BBS Software	Phil Becker/eSoft Inc. ..... Aurora ,CO
Telegodzilla	(503)621-3746	Home of ZModem File Transfer Protocol/YModem/YAM	Chuck Forsberg/Omen Technology Incorp. ... Portland ,OR
Telix Support BBS	(416)439-8293	Support Service for Telix Communications Software	Colin Sampaleanu/Exis Incorporated ..... West Hill ,Ontario
Texas State Law Library BBS	(512)463-1371	On-line Legal Periodicals and Citation Database	..... Austin ,TX
That Old Frog's Swamp	(715)362-3895	Zen Bhuddist Monk/PC Consultant	Ryugen Fisher/The Old Frog ..... Rhinelander ,WI
The Back Room	(718)849-1614	America's Largest Exclusively Gay DB - Home of Gaycomm	Artie Kohn ..... Richmond Hill ,NY
The Business BBS	(213)477-0408	Microsoft Windows Support	Jim Appleby ..... Los Angeles ,CA
The Ledge PCBoard	(818)352-3620	Home of Textview Door for PCBoard Systems	Joseph Sheppard ..... Tujunga ,CA
The LiveWire BBS	(609)866-2551	Online Magazine Subscription Orders/BBS Callers Digest	Richard Paquette ..... Mt. Laurel ,NJ
The Other BBS 1:1/0	(717)657-2223	Fidonet Zone Coordinator for North America 1:1/0	George Peace ..... Harrisburg ,PA
The Well	(415)332-7190	Unix Conferencing System - $8 monthly plus $3 hourly	Whole Earth Lectronic Link ..... Sausalito ,CA
TurboTax Support BBS	(619)453-5232	Income tax information - Turbotax 1040 program support	Chipsoft Inc. ..... San Diego ,CA
U.S. Robotics - Sit UBU Sit	(708)982-5092	Support for US Robotics HST 9600 bps Modems	U.S. Robotics Corporation ..... Skokie ,IL
Unitex Communications BBS	(201)678-1367	United Nations Press Releases - Unitex News	Dr. James Waldron ..... Glen Ridge ,NJ
US Naval Observatory BBS	(202)653-1079	Time - Date - Sunrise - Sunset - Enter @TCO for Commands	US Department of Commerce US Naval Obser Washington ,D.C.
USA Today Distribution Service	(303)973-4222	Distribution Service for USA Today/Newsbytes/Boardwatch	Boardwatch Magazine ..... Littleton ,CO
USDA NBIAP BBS	(800)624-2723	Biological Impact Assessment - Genetic Engineering/Biotech	U.S. Department of Agriculture ..... Blacksburg ,VA
USGS Quick Epicenter Determin.	(800)358-2663	Earthquake Epicenter Data - Geomagnetism7E2	US Geological Survey Earthquake Info Cnt .. Denver ,CO
USNO Time of Day for Clocks	(202)653-0351	Xmits ASCII Time String - Sync Your PC to USNO Atomic Clock	US Naval Observatory ..... Washington ,D.C.
UT Library Online Catalog	(512)471-9420	Online Library Card Catalog Listing 3.5 million entries	University of Texas at Austin ..... Austin ,TX
VA Property Listing BBS	(602)640-2371	List of VA held property foreclosures	Veterans Admin - Phoenix Regional Office ... Phoenix ,AZ
Vacation Florida Database	(407)839-0333	Florida Tourism Information/Database of Campsites/Hotels	Richard and Barbara Kenney ..... Orlando ,FL
Ward and Randy's CBBS	(312)545-8086	World's First and Oldest Micro-based BBS - Since 2/16/78	Ward Christensen/Randy Suess ..... Chicago ,IL
WeatherBank	(800)827-2727	Online Weather Forecasts for Any City - Download Radar Data	Steve Root/WeatherBrief Data Services ..... Salt Lake City ,UT
Western Digital Tech Support	(714)756-8176	Hard Drive/Controller Installation and Config Data	Western Digital Corporation ..... ,
Windsor Manor	(203)688-4973	Over 27 Online Adventure Games	Jim Taylor ..... Windsor ,CT
Word Perfect Customer Support	(801)225-4444	Word Perfect 4.2/5.0/5.1 Support/Printer Drivers	Word Perfect Corporation ..... Orem ,UT
XTree BBS	(805)546-9150	Support for XTree Pro Gold DOS Shell Program	XTree Company ..... San Luis Obispo ,CA
XyQuest Support BBS	(508)667-5669	Support for XyWrite Word Processor - Custom Keyboard Files	XyQuest Inc. - Christine Madsen ..... Bellerica ,MA
Zenith Technical Support BBS	(800)888-3058	Technical Support for Zenith Desktop and Laptop Units	Zenith Data Systems Customer Service ..... Chicago ,IL

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MICROLINK B

Multiline BBS (303) 972-9600

OVER ~~60,000~~ OVER 90,000! FILES FOR YOUR IBM OR COMPATIBLE COMPUTER!

WHAT IS MICROLINK B?

Microlink B is the largest electronic Bulletin Board System (BBS) in the area, specializing in files and message services for the IBM-PC, XT, AT and compatible systems.

Microlink B has been serving the serious BBS consumer for five years with quality public domain and shareware software, as well as interesting and informative message areas covering a variety of topics.

LOTS OF FILES!

Your membership to Microlink B gives you immediate access to one of the finest and most complete software collections you'll find anywhere. There are presently over ~~60,000~~ 90,000 individual files conveniently categorized and packaged for efficient downloading to your computer.

We DO NOT provide software for the Mac, Amiga, or other non-IBM compatible computers. Why? We think it's better to put all our efforts into providing you with the absolute best software collection for your IBM-PC or compatible system.

Even though our software collection is pretty impressive the way it is, we are always working to make it even better. We are constantly adding new software and updating existing software with newer versions. With over **1,140 megabytes** of on-line file storage capacity, you'll have access to everything from games to statistical calculation packages, database programs to personal finance managers, programmer's tools to communications utilities.

MESSAGES AND E-MAIL TOO!

We don't stop with our files collection. The Microlink B message base is connected to the world via the FidoNet public amateur network. We 'echo' many of our message areas to other Fido systems in the area, across the country, and around the world. Our message areas cover a variety of interesting topics from programming and technical issues to law, from aviation to using Lotus-123 and dBase, and much more. And, yes, we do offer private E-MAIL message areas where you can leave confidential messages for other Microlink B members.

USA TODAY ON-LINE

Microlink B also offers USA Today's Decisionline, a computerized version of the popular USA Today newspaper. Decisionline is updated early every weekday morning.

TAKE A TOUR OF MICROLINK B TODAY

You can access Microlink B anytime to take a test drive. Set your communications program for 8 data bits, no parity and one stop bit (refer to instructions for your modem or communications software). Dial Microlink B at (303)-972-9600. Microlink B will ask for your full name, then guide you along the way with easy to follow menus and instructions. You'll be able to tour the system, look over our software collection, and read messages. All telephone lines connected to Microlink B operate at 1200, 2400, or 9600 baud. 9600 baud requires the use of an HST compatible modem.

BECOME A MICROLINK B MEMBER

For just $35.00 you can have full access to Microlink B for one year, or pay just $25.00 for six month access. You can register on-line with your Visa or MasterCard, you can download our mail-in registration form, or use the handy order form below.

Prices and specifications are subject to change without notice.

Registration Form **Microlink B** (303) 972-9600
P.O. Box 620247 - Littleton, Colorado 80162
YES! I want **FULL** access to **Microlink B!**

_____One Year $35.00 _____Six Months $25.00
_____Check Enclosed _____Visa _____MasterCard
Credit Card #_____
Expiration Date_____
Signature_____

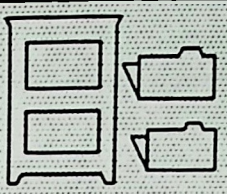
Name_____Date_____
Address_____
City_____State_____ZIP_____
Telephone (_____)_____

Name you will use for BBS Logon:

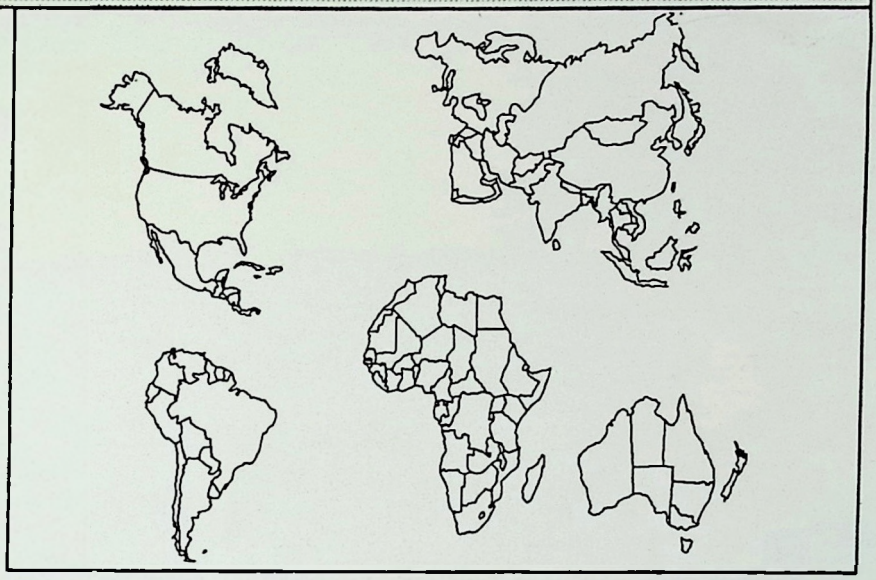
First_____Last_____
Password_____

The File Cabinet BBS

An Interlink BBS



Why Do People The World Over Call The File Cabinet BBS?



Shouldn't You Call And Find Out?

It's hard to find a place where someone with a computer hasn't called The File Cabinet BBS. Brazil, Hong Kong. France, Italy, Germany, Nigeria, Japan, and more. People from more than 30 countries on six continents have called The File Cabinet BBS.

Why do so many people call The File Cabinet BBS from so far away? What do they know that you don't know?

Maybe it's the more than 80,000 MS-DOS files available for downloading. Maybe it's the 100 Interlink conferences that cover dozens of computer and non-computer related topics. Topics such as programming, word processing, pets, auto racing, small business, and a national buy-sell conference. Or maybe it's because The File Cabinet BBS has so many telephone nodes that you'll never get a busy signal.

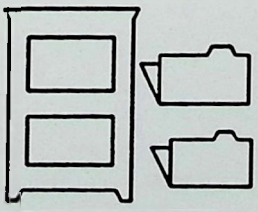
If they're calling from around the world, maybe you should call too! The File Cabinet BBS.

See for yourself why *Computer Shopper* called The File cabinet BBS the best full-service board in the United States. And why *PC Resource* named The File Cabinet BBS one of the top three boards in the country.

To call The File Cabinet BBS and see what you've been missing, set your modem for 1200, 2400, 9600, or 14.4K baud, 8 data bits, no parity, 1 stop bit. Then dial 215-678-9334. Just follow the on-screen instructions and you'll see why people from all over the world call The File Cabinet BBS.

Special Offer!

Call now to register on The File Cabinet BBS and get a 30-day trial subscription. FREE!



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